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Why a Farm Bill Can't Solve All of Agriculture's Problems

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China Applies Brakes
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PERSPECTIVES

PRECIOUS LITTLE GOOD NEWS in USDA's first export forecast for fiscal 1986, which runs from October 1985 through September 1986. Both value and volume of U.S. agricultural exports will probably drop, according to USDA economists. Specifically, value is pegged at around $29 billion, a 7% decline from fiscal 1985's $31.2 billion and the lowest level since 1978. This is down nearly $15 billion from 1981's record high of $43.8 billion, says economist Steve MacDonald of the Economic Research Service. Export volume, he adds, is estimated at a little over 120 million tons, down 4% from 1985 and the lowest level since 1977.

Three factors are responsible: Large supplies, weak demand, and strong competition. Current world prices for most major crops are not likely to improve significantly, MacDonald says. The reason: excessive supplies. "In 1985, we had the second straight year of record world grain and oilseed crops," MacDonald says. That, combined with a less expansionary world economy, will keep world prices down. Volume will also be cut by continued strong competition from other exporters and a lower demand from traditional importers. Many traditional importers have increased their own production, some have become self-sufficient, and some have even become net exporters. Increased production in the Soviet Union, a major market, will also dampen U.S. export prospects, MacDonald says. And, adding to the slump in world trade, will be continued debt repayment problems in the less developed countries.

U.S. agricultural imports are expected to hit a record $20 billion. Our agricultural trade surplus is forecast to drop by $2.4 billion to only $9 billion, the lowest since 1973.

Highlights for major commodities:

Wheat and flour: World wheat trade will continue to be a buyer's market. U.S. wheat and flour exports are currently forecast at 29.7 million tons (wheat equivalent) worth around $4.0 billion in fiscal 1986. While volume is expected to be about the same as last year, a continued slide in world and U.S. export prices could mean a 10% decline in value. This would result in the lowest value for wheat and flour exports since the $3.1 billion in 1977. Continued gains in wheat production in several major importing countries and a larger Soviet crop are expected to depress world import demand in 1986. Although wheat production is down in the major foreign exporting countries, record stocks will result in exportable supplies that far exceed any expected import demand.

Coarse grains: U.S. exports are forecast at $5.9 billion, down $1 billion from 1985. Prices will likely continue to decline, and volume, forecast at a little over 49 million tons, may hit its lowest level since 1975. The sharp reduction in Soviet demand will more than offset an expected increase in exports to some Latin American and Asian countries. In addition to continued competition from Argentina, Thailand, and China, 1986 will likely see the return of South Africa as a net exporter, following 2 years of net imports.

Oilseeds: There is some good news here. The volume of U.S. soybean exports is expected to increase. The major reason: lower production (and exports) in Brazil. Analysts say the United States may now be able to recapture some portion of the market shares lost to the Brazilians in recent years. Despite larger sales volume, value may be down slightly from 1985's $6.4 billion. Slow growth in meal demand, expanded oilseed production in a number of major importing countries, and large palm oil supplies are helping to weaken prices.

Cotton: U.S. exports are forecast at around 800,000 metric tons worth $1.2 billion, down dramatically from last year's already depressed levels of 1.3 million tons and $2.0 billion. Lower priced Chinese and Pakistani cotton is expected to cut U.S. exports to such key markets as Japan and South Korea.

Livestock, dairy, and poultry: U.S. exports will probably remain about the same as last year. Livestock and livestock products are forecast at $3.3 billion, unchanged from 1985 and 5% below 1984.

FARMLINE

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Practical economic intelligence from USDA's Economic Research Service

FEATURES

Agriculture's Problems Require "Macro" Solutions *by John E. Lee* 4

No farm bill can solve many of the fundamental problems now facing American farmers. The broader interests of agriculture depend more on the future direction of fiscal, monetary, tax, and trade policies, explains John Lee, chief economist of the Economic Research Service.

Competing for Space in the West German "Super" Market *by Doug Martinez* 8

West Germany is the world's largest buyer of agricultural products, and the United States is one of its major suppliers. U.S. sales, however, haven't kept pace with the overall growth in West German imports.

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Cranberry producers used to rely on Thanksgiving and Christmas holiday sales for virtually all their income. Not any more. Cranberries are now a berry for all seasons.

China Applies Brakes to Agricultural Miracle *by Ellen Banker* 13

Government incentives to stimulate crop production in China were a little too successful: Production climbed so much that surpluses overwhelmed the marketing system, and quality didn't always match demand. Last year, the government slashed some incentives, bad weather hit, and crop production dropped for the first time since 1980.

Mexico: Still a Top U.S. Export Market *by Doug Martinez* 14

Faced with population pressures and a farm sector that struggles vainly to meet its domestic food needs, Mexico is likely to remain a major U.S. export market, especially for basic, bulk commodities.

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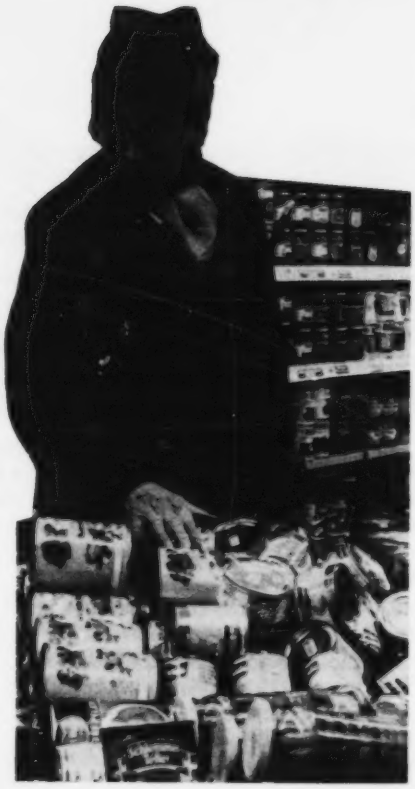

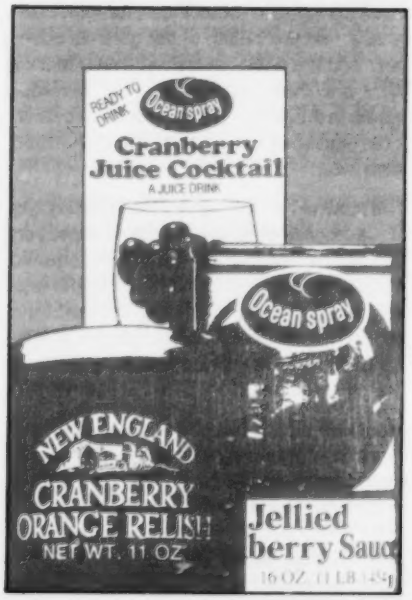

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Agriculture's Problems Require "Macro" Solutions

The new farm bill is raising a number of questions. Is it a good bill? How will it affect farmers? Does it offer too little support from government, or too much intervention?

These questions deserve attention, but they can be misleading if they imply that farm legislation alone could be the key to renewed prosperity in agriculture.

In the article that follows, economist John Lee explains why this farm bill, or any other, is unlikely to solve some of the fundamental problems now facing American farmers. For farmers and their representatives to have an effective voice in policies affecting agriculture, they need to pay year-round attention to decisions on the direction of the U.S. economy. General economic policies, Lee contends, affect their broader interests as much as, or more than, a farm bill.

John Lee is the administrator of USDA's Economic Research Service, a position he has held since October 1981. He grew up on a family farm in Pickens County, Alabama. Lee holds a Ph.D. degree in economics from Harvard University and has served as a USDA economist since 1962.

The new farm legislation will be vitally important to American agriculture, perhaps for years to come. Resources throughout the agricultural community and beyond, into government, nonfarm industries, and public interest groups, were mobilized to prepare for and contribute to farm bill deliberations.

Why, then, do many agricultural economists continue to focus their attention elsewhere—on the health of the general economy and the policy decisions that affect it? Why are they suggesting that developments in these two areas could prove even more significant for agriculture than the 1985 farm bill?

The answer requires a basic understanding of *macroeconomic* policy and its impact on agriculture. Macro or general economic policies guide the actions taken by the federal government to shape the nation's economy. *Monetary policy* and *fiscal policy* are the two major components, and they are closely related.

Monetary policy deals with the supply and regulation of money and credit. Fiscal policy determines what the government spends and how it finances those expenditures.

A Primer on Monetary Policy

As the economy grows, it needs more money for normal commercial transactions, capital investments, and other purposes. Monetary authorities, primarily the Board of Governors of the Federal Reserve Board (often called *the Fed*), control growth in the money supply. Briefly, they do this by buying and selling federal securities and by setting rules and regulations for the nation's banking system.

The Fed can fuel economic expansion by allowing the money supply to increase faster than real growth in economic activity. When more money is available relative to the normal needs of the economy, interest rates tend to fall just as the price of any good falls when supply grows faster than demand. When interest rates drop, businesses invest more, consumers buy more, and overall economic activity increases.

Unfortunately, inflation also increases because more dollars are available to buy the same supply of goods and services, thus bidding up their prices.

Conversely, the Fed can "cool" the economy by causing the money supply to expand more slowly than real growth in economic activity. This makes money scarcer relative to the need for it, and that drives up interest rates. Higher interest rates discourage investment, consumer spending, and overall economic activity. At the same time, people have fewer dollars to pay for the same stock of goods and services, so inflation slows.

The Fed must do a balancing act, constantly adjusting the growth rate of the money supply to assure adequate funds for sustainable economic growth without fueling inflation. The Fed's tendency to favor one side of this growth-inflation tradeoff over the other is what characterizes the nation's monetary policy in any given period.

A quick review of recent history may help explain. For several decades culminating in the 1970's, the Fed "targeted" interest rates, allowing inflation to adjust as needed. Low, stable interest rates were maintained by increasing the money supply, which, in turn, tended to push up inflation. Inflation rates began to climb in the late 1960's and early 1970's.

After a number of attempts to check accelerating price levels in the 1970's, runaway inflation finally prompted a major shift in Fed policy. Since 1979, the Fed's policy has been to hold money supply growth within a given range, providing enough money for high but sustainable economic growth while keeping inflation in check. Instead, interest rates are allowed to float up and down to reflect forces in financial markets.

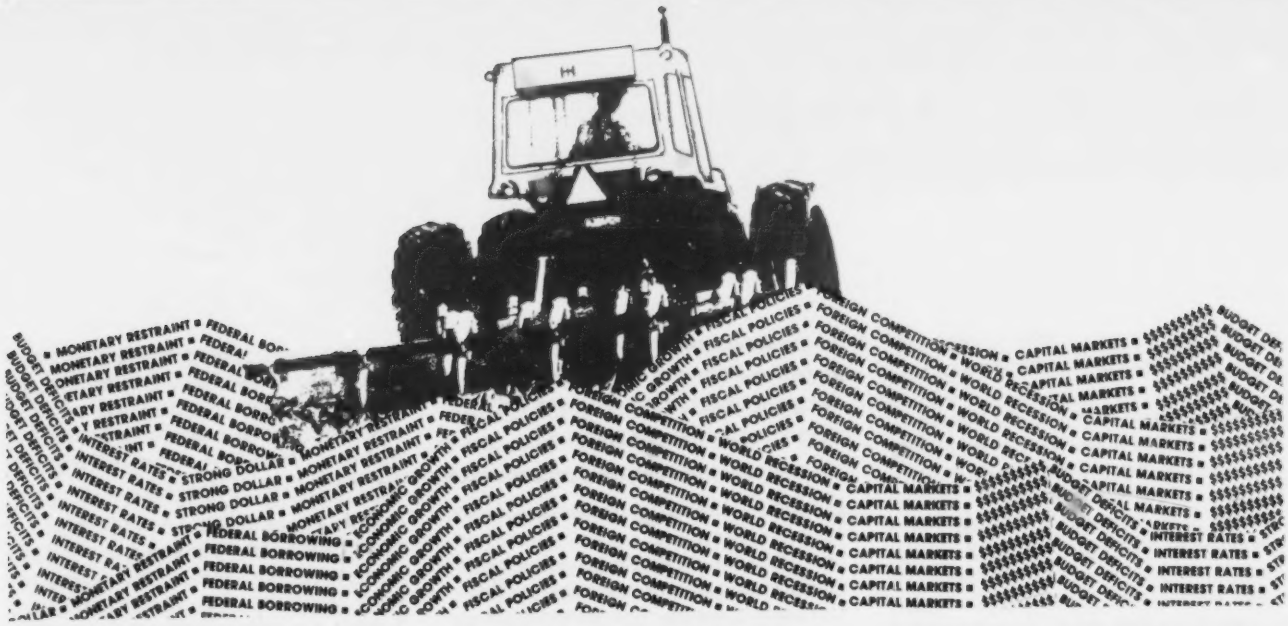
This policy shift has been crucial for agriculture, affecting the availability and cost of credit, inflation rates, land values, currency exchange rates, foreign demand, and economic growth here and abroad. More about that later.

A Primer on Fiscal Policy

Fiscal policy determines how much money the federal government collects and how much it spends. Spending in excess of revenues creates a deficit, and deficit spending can stimulate the economy by pumping more money in than taxes take out. This increases the demand for goods and services, encouraging production and new investments.

Several strategies can be employed to finance federal budget deficits: The government can borrow money from private sources, the Fed can increase the money supply to fund the deficit spending, or some combination of both methods can be used.

Financing the deficit by increasing the money supply was the predominant policy from World War II until the late 1970's. The money supply was increased enough to provide for normal business needs and to cover the federal deficit. This created no major problems as long as budget deficits were mod-


MONETARY RESTRAINT • FEDERAL BORROWING • STRONG DOLLAR • FISCAL POLICIES • FOREIGN COMPETITION • WORLD RECESSION • CAPITAL MARKETS • BUDGET DEFICITS • INTEREST RATES • $$$$$$$$$$

est and tied mostly to cyclical downturns in the economy.

During the 1970's, however, budget deficits grew and became more persistent as rising tax revenues did not keep pace with more rapidly rising federal spending. The policy of financing the deficit by printing more money began to fuel rising inflation. This was the logical result of letting the money supply grow faster than real economic activity.

With the shift in monetary policy at the end of the decade came a parallel shift in fiscal policy. Instead of increasing the money supply to cover the deficit, the government opted to fund the deficit like you and I do—by borrowing money. This policy, pursued more or less since 1980, reduces inflationary pressures but increases competition in credit markets, pushing up interest rates.

Agriculture in Double Jeopardy

In tandem, current fiscal and monetary policies have two striking consequences. First, they send conflicting signals to the economy, since rising deficits effectively put one foot on the accelerator while monetary restraint puts the other foot on the brake.

Second, and more important for agriculture, interest rates are driven up in two ways: by the fiscal policy of borrowing to finance the deficit, and by the monetary policy of allowing interest rates to float to allocate the more tightly controlled supply of money among prospective borrowers. The result is interest rates that, after adjustment for inflation, have been at historically high levels in the 1980's.

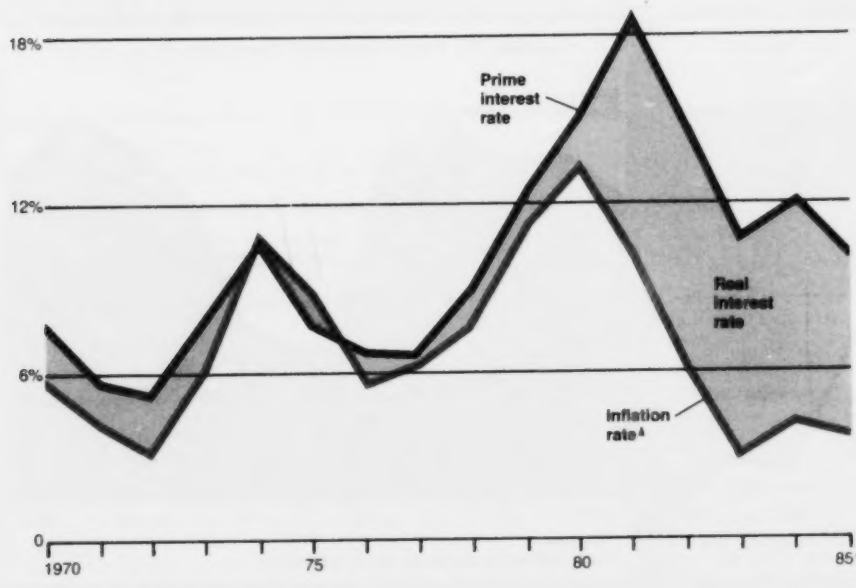
High interest rates are hardest on those sectors of the economy that are capital intensive and export oriented. Capital-intensive industries tend to depend very heavily on borrowed funds. Export-oriented industries are vulnerable to changes in foreign exchange rates, which are strongly influenced by real interest rates here and abroad.

Agriculture fits into both the vulnerable groups. It has the highest ratio of investment to sales of any major industry, making it one of the most capital-intensive sectors of the economy. It also has one of the highest ratios of exports to total production, putting it among the most export-dependent sectors.

We have just seen how large federal deficits and anti-inflationary monetary policy have combined to drive up interest rates. It is equally important, I think, to understand how interest rates and other effects of monetary and fiscal policies are channeled to the farm sector because of agriculture's links with the rest of the U.S. economy and the world economy.

These effects are difficult to trace through, but they can be grouped under three categories: effects on farm costs, effects on

A Major Shift in Economic Policy Ended Runaway Inflation, But Helped Drive Up Real Interest Rates



▲As measured by the CPI-U. *Forecast

the demand for goods that farmers produce, and effects on asset values.

Impact on Farm Costs, Land Values

Because farmers are heavy users of borrowed funds, rising interest costs have increased the costs of production in agriculture. In 1979, farmers' interest expenses amounted to $12 billion, or about 13 percent of all cash production expenses. By 1984, farmers paid more than $22 billion in interest on farm debt, or 19 percent of all costs. Interest had become the largest single cash cost of production in farming.

It is worth adding that when the average interest rate on outstanding farm debt rises by 1 percentage point, farm production expenses increase by about $2 billion.

The high cost of money has also helped to depress the value of farm assets, especially land. Other things being equal, the higher the interest rate, the less one can afford to pay for land.

The demand impacts of macroeconomic policies are just as important as the more obvious cost effects.

Interest on debt became the largest single cash cost of production in farming.

In the late 1970's, an overheated world economy produced galloping inflation, prompting the United States and other industrialized countries to adopt restrictive monetary policies. The less developed countries, meanwhile, were beginning to slow or trim their imports in response to mounting foreign debt problems. In 1980, the world was plunged into a severe recession.

It is against this backdrop of events that our domestic economic policies have had a series of negative effects on the farm economy.

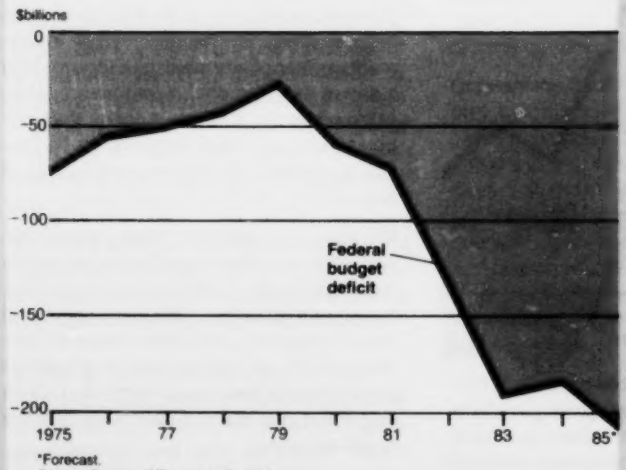
High real interest rates in the United States, coupled with foreign perceptions that the United States was and is a safe haven in troubled times, attracted capital from abroad. The United States quickly became a magnet for foreign investment. Demand for dollars to make those investments caused the dollar's value to appreciate sharply in terms of other currencies. (At the same time, the large inflow of foreign capital masked some of the pressure on our own credit markets, probably slowing the rise in interest rates caused by federal borrowing.)

Some rules of thumb: Each $50 billion of structural deficit in the federal budget causes real interest rates to be 1 or 2 percentage points higher than they would otherwise be. Further, for each 1 percentage point increase in the gap between real interest rates in the United States and those in other countries, the value of the dollar rises 5 to 10 percent.

Translates Into Weaker Demand

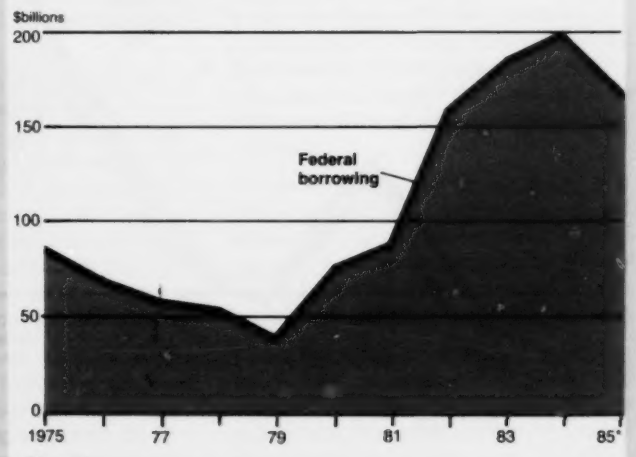
This increase in the value of the dollar—which is perceived as an export price increase for American goods—translates directly into weaker demand for our farm products. The higher value of the dollar relative to other currencies makes U.S. export goods more expensive to foreign buyers, while foreign goods look cheaper to Americans. Hence, U.S. exports decline, and our imports from other nations surge.

Growing Federal Budget Deficits . . .



*Forecast.
Source: Bureau of Economic Analysis.

. . . Financed by Large Federal Borrowing . . .



*Forecast.
Source: Federal Reserve Board's flow of funds account.

General economic data provided by economist Dave Torgerson.

The lost exports end up as larger carryover stocks, which tend to depress farm prices and farm incomes. In other words, farmers end up selling a smaller volume, and often at a lower price.

There are other demand consequences, too, stemming from high real U.S. interest rates and the factors that cause them. As more foreign capital is banked in the United States, for instance, funds available abroad are reduced. Developing nations have less money to pay for imports and to invest in economic recovery and growth. Their potential to become better customers for U.S. farm products is directly tied to their economic growth. The drain of capital from these countries reduces both our near-term and long-term export prospects.

There is still more. The high cost of money and the attractive alternative of investing in dollar-denominated U.S. assets reduces the incentive of other nations to tie up money by holding commodity stocks. They do better by keeping their own food stocks at low levels, letting the United States shoulder the costs of stockholding.

The drain of capital from the developing countries reduces both our near-term and long-term export prospects.

Similarly, private U.S. firms facing high money costs also try to minimize nonessential stockholding, thus pushing the burden back to the farm level. This increases farm costs and reduces demand, the most obvious result of which is lower commodity prices.

A strong dollar has some redeeming features. Lower priced imports hold down U.S. inflation, and that helps hold down farmers' expenses. A 10-percent increase in the value of the dollar reduces the general inflation rate about 1 percent, and that could translate into a reduction of around $1.5 billion in farm production expenses.

Of course, cheap imports also cost us jobs. More than half the income of farm operator households comes from nonfarm sources, primarily wages and salaries. Industries that provide many of the rural jobs in the Southeast and other areas are very vulnerable to foreign competition.

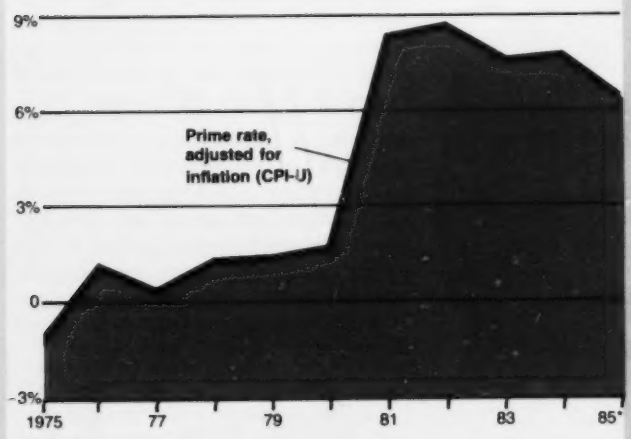
Where Do We Go From Here?

Adding up all the effects of macroeconomic policy on the farm sector, it's easy to see why many agricultural economists are concerned about the general economy. It is our view that macroeconomic developments are the principal source of the problems farmers face today.

As a society, we may have little difficulty agreeing on general economic goals, such as stimulating growth in the economy and reducing interest rates if we can avoid a new round of inflation. Similarly, few people would object to sharp cuts in the federal deficit if that could be accomplished without raising taxes or trimming programs.

In practice, however, economic decisions involve many tradeoffs and uncertainties. That leaves the future direction of fiscal, monetary, tax, and trade policies open to debate. Whether they participate in the debate or not, farmers have a vital stake in the outcome. □

. . . Help Keep Real Interest Rates Up . . .



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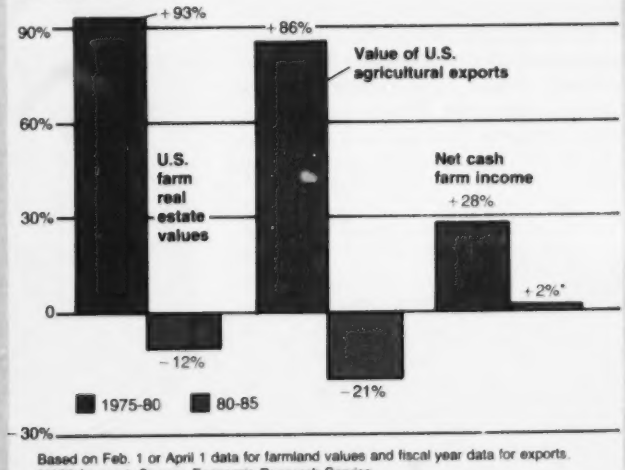
. . . Contributing To Depressed Land Values, Exports, and Farm Income



Based on Feb. 1 or April 1 data for farmland values and fiscal year data for exports.
*1985 forecast. Source: Economic Research Service.

Competing for Space in the West German "Super" Market

The world's largest buyer of agricultural products isn't the United States, Japan, or the Soviet Union. It is West Germany, a country with a population of only about 62 million.

This reminder of the importance of the German market comes from economist Stephen Sposato of USDA's Economic Research Service. "During the 1970's," he says, "the rising affluence of West German consumers provided the major impetus to growth in this market."

Since 1980, he adds, West Germany has spent an average of more than $21 billion a year on farm product imports from its neighbors in the European Community and from dozens of other nations. The United States is one of its major suppliers, and West Germany ranks among the top U.S. farm markets. U.S. sales, however, haven't kept pace with the overall growth in West German agricultural imports.

The U.S. share of the market slipped from 13 percent in 1974 to 11 percent in 1980, even though West Germany bought a record $2.7 billion in American farm products that year. In 1984, West German spending on U.S. farm products dropped to around $1.7 billion, the lowest figure since 1976. The U.S. share of the market fell to just 8 percent.

Sposato claims that West Germany is likely to remain a huge import market. Its agriculture is constrained both by a fairly harsh, northerly climate and by modest land resources. Many of its richest farming areas in the region of Prussia were partitioned into East Germany at the end of World War II.

On the other hand, he says, West Germany's need for some of the major U.S. bulk products is gradually declining. Outside these traditional product areas, the competition is tough, the opportunities are limited, and the United States is handicapped by European trade barriers and a strong American dollar.

At the moment, grains, soybeans, and animal feeds make up around 42 percent of U.S. farm exports to West Germany. This is down sharply from previous years' levels.

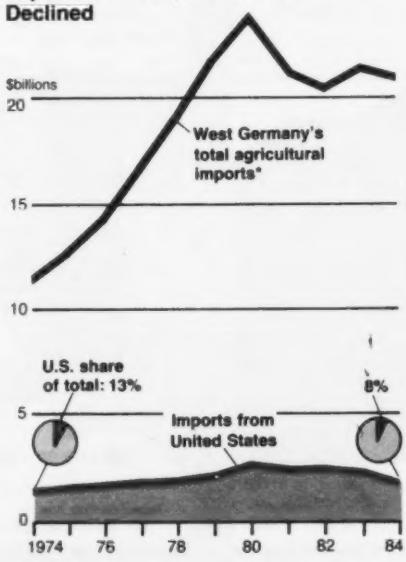
Despite the obstacles, American traders of farm and food products may need to look more to other areas to boost sales—fruits and fish, for example.

Wheat and corn imports will continue to dwindle, Sposato says. West Germany's own production of feedstuffs is increasing. New varieties of corn, which was previously grown only as green fodder in West Germany, are now harvested for grain as far north as the Danish border. That's on a latitude with the Hudson Bay in Canada. Wheat and corn imports for bread and starches are being replaced by domestic production and new milling techniques.

Germany should remain a large—but not a growing—market for U.S. soybeans. Climatic factors will continue to make it difficult for Germany to produce all of its vegetable oil and protein needs.

Sunflowers are another U.S. oilseed crop that has recently found favor with the German consumer. Low cholesterol levels and the neutral taste of the oil make it popular with German homemakers.

As West Germany's Agricultural Imports Climbed, the U.S. Share Declined



*Measured in U.S. dollars.

Deficiency in German Farming

The major deficiency in West German food production is and will remain in tropical products—coffee, tea, cocoa, and citrus and other tropical fruits. None of these are grown in Germany, and all are consumed in large quantities.

The United States exports some tropical products, including oranges and lemons, but so do Spain and Portugal. Both nations are scheduled to enter the European Community (EC) this year, and membership gives them a major competitive advantage over other exporters.

West German imports of processed foods, items such as ready-to-eat soups, have been growing as well. Processed foods accounted for 30 percent of imports in 1980.

"Until very recently, German homemakers prepared soups and most other dishes in the traditional way, using raw ingredients," Sposato says. "That's changing. Today, German homemakers, like their American counterparts, are buying more prepared, convenience foods. The transition began a few decades ago in the United States, but the change has occurred fairly recently in West Germany."

But greater demand does not necessarily translate into larger U.S. sales. The United States has had limited access to this processed foods market. Tariffs are high on many products, and competition from German producers and the free access granted other EC members are difficult barriers to overcome in these circumstances.

According to Sposato, the United States must try to expand exports by "negotiating for freer trade and by tailoring our products for the West German market." One way our exports can be better matched with the preferences of German consumers, he says, is to ensure that package sizes and processing techniques meet German tastes and standards.

Even if tariffs did not turn aside many U.S. products, American exporters still face stringent German food requirements. German health regulations tend to differ significantly from those in the United States and are difficult for U.S. processors to meet.

Food manufacturers who wish to export to West Germany may be obliged, for example, to set up special production and treatment processes to meet German requirements. In many cases, it is difficult to justify so costly an investment, even for the large German market.

Take the case of beer, Sposato says. German law limits the ingredients that can be used to produce beer to the traditional hops and barley malt. Modern manufacturers outside Germany use less expensive substitutes such as manioc and chemical additives in their beer. Germany's EC trading partners recently complained that these purity laws unduly restricted trade. So far, however, Germany has taken no action.

"Conceivably, some of these laws which the Germans feel less strongly about for health reasons could be changed as part of trade negotiations," says Sposato. "There is a price to pay, though. Germans would certainly want greater access to U.S. markets for commodities like cheese where their centuries-old manufacturing traditions give them a specialty niche in the food market."

The United States currently has quotas on imports of cheeses.

High U.S. Dollar a Factor

One other factor, of course, that could favor U.S. exporters is completely out of their hands: the value of the U.S. dollar on world currency markets.

"A weak U.S. dollar helped bolster U.S. exports of processed foods to Germany in our peak sales year of 1980," says Sposato, "but this situation was reversed when the dollar strengthened against the German mark in 1981." In the last 5 years, the dollar doubled in value against the mark, and recent declines in the dollar's value haven't substantially altered the unfavorable exchange ratio.

Despite the dollar's strength and the frustrations of selling to a sometimes sheltered market, U.S. exporters have had some success in discovering growth opportunities in particular product areas.

Among the items that appear to have promising potential for increased exports are frozen blueberries, pecans, raisins, and shellfish. The United States has a nearly 15-percent share of the West German market for frozen blueberries, and the value of pecan exports has doubled in the last 5 years.

"Raisins, too, are becoming more popular in West Germany for more than baking uses," says Sposato. "Test results from market promotion campaigns indicate that good sales potential exists for raisins as a snack food."

U.S. exporters should also do well in selling salmon, lobster, crab, and shrimp to the West Germans.

"The market potential for salmon, especially frozen, is excellent," says Sposato. "Moreover, the outlook for all kinds of crustaceans, including lobster, crab, and shrimp, is good. Continuing water pollution and overfishing problems are diminishing European production."

German Market Tempting

With all its imports, West Germany's agricultural trade deficit is predictably high: $9 billion last year.

"That may mask the fact that West Germany has become one of the world's foremost agricultural exporters," says Sposato. "Concentrating on specialty products such as wine and cheese, and helped by the EC's generous export subsidies, the West German food industry has grown into a formidable international trader."

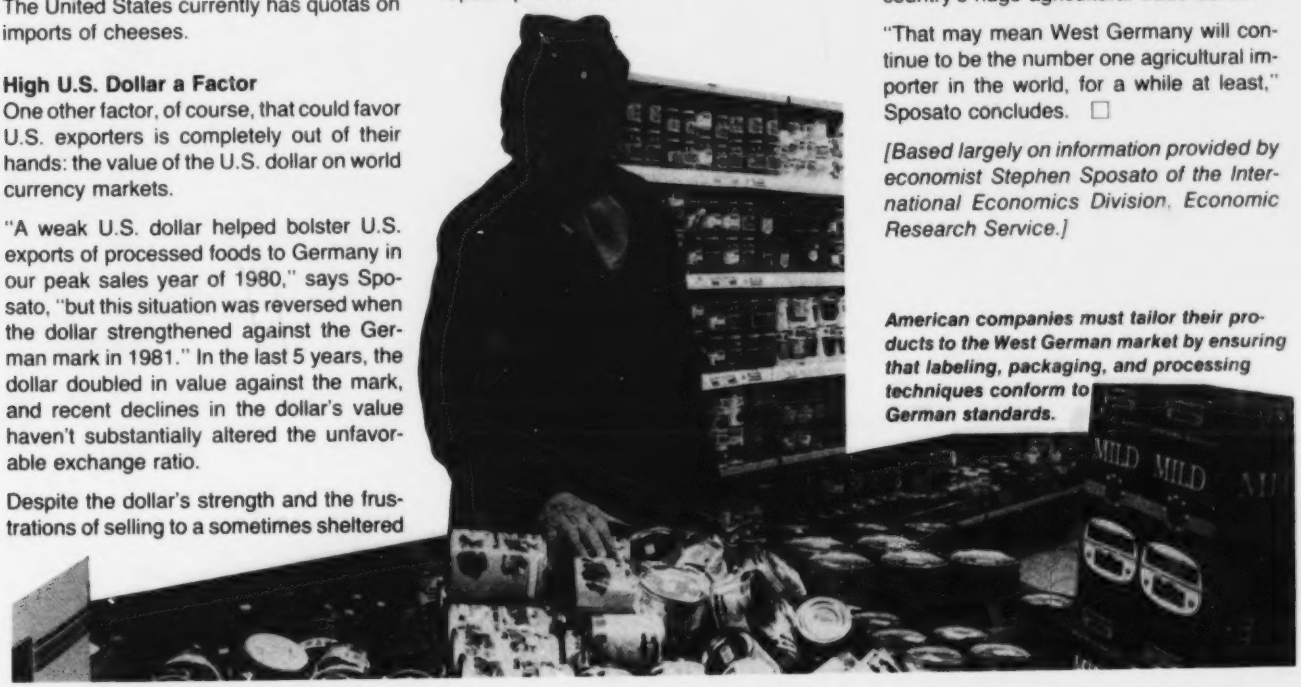
Much of the credit, certainly, goes to West German farmers, who have coaxed high levels of productivity from their typically tiny (by U.S. standards) 40-acre farms. Germany's farmers are aided by modern equipment, much of which could be used on far larger farms.

"That they can afford this overinvestment is a result of the high price supports of the EC's Common Agricultural Policy," notes Sposato.

Try as they might, however, it's unlikely that German farmers will ever eliminate the country's huge agricultural trade deficit.

"That may mean West Germany will continue to be the number one agricultural importer in the world, for a while at least," Sposato concludes. □

[Based largely on information provided by economist Stephen Sposato of the International Economics Division, Economic Research Service.]



American companies must tailor their products to the West German market by ensuring that labeling, packaging, and processing techniques conform to German standards.

1986 Reports Calendar
January-June

Titles of Outlook and Situation reports of the Economic Research Service are printed in color. Summaries of reports are released at 3 p.m. on the dates shown. Copies of complete reports are due off press about a week later. The ***World Agricultural Supply and Demand Estimates***

JANUARY

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
		1	2	3 Egg Products
6 Celery Dairy Products	7 Poultry Slaughter	8	9 Vegetables	10 Crop Production Small Grains World Agricultural Supply & Demand
13 Turkey Hatchery Turkeys	14	15 Potato Stocks Milk Production	16	17
20	21 Catfish	22	23	24 Cattle on Feed Livestock Slaughter Cold Storage
27 Noncitrus Fruits & Nuts—Annual Peanut Stocks & Processing	28 Eggs, Chickens, & Turkeys Layers & Egg Prod.—Annual	29 Sheep & Goats	30	31 Agricultural Prices

FEBRUARY

MONDAY	TUESDAY	WEDN
3 Dairy Products	4 Egg Products Poultry Slaughter	5 Agricul Reso
10 Crop Production Crop Prod.—Annual Grain Stocks; Cattle Rice Stocks; World Agricultural Supply & Demand	11	12 Turkey
17	18 Prospective Plantings Agricultural Outlook	19 Crop Va Sugar M Stocks Exports
24 Livestock & Poultry	25 Eggs, Chickens, & Turkeys Fruit	26

APRIL

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	1 Poultry Slaughter	2 Meat Animals, Prod., Disp., & Income Dairy Products	3	4 Celery
7	8	9 Vegetables Agricultural Resources[1]	10 Crop Production World Agricultural Supply & Demand	11 Turkey Hatchery
14 Potato Stocks Middle East & North Africa	15 Cotton	16 Milk Production FATUS[2]	17 Agricultural Outlook	18 Poultry, Prod., Disp., & Income World Food Needs Update
21 Catfish East Asia & Oceania	22	23 Eggs, Chickens, & Turkeys	24 USSR	25 Cattle on Feed Livestock Slaughter Cold Storage
28 Peanut Stocks & Processing	29 Grain Stocks Rice Stocks	30 Egg Products Agricultural Prices		

MAY

MONDAY	TUESDAY	WEDN
5 Dairy Products Dairy Products—Annual Livestock & Poultry	6 Celery	7 Western
12 Milk, Prod., Disp., & Income	13 Turkey Hatchery	14 Milk Pro
19 Wheat	20 Catfish Farm Labor	21 Exports
26	27	28 Peanut S Proce Eastern

[1] Reports cover Fertilizer and Pesticides, Feb. 5; Land Values Summary, April 9; and Land Values and Markets, June 16.
[2] Foreign Agricultural Trade of the United States.

reports, issued by the World Agricultural Outlook Board, are also printed in color. These reports are released to the press in their entirety on the dates shown. To request subscription information on any of these reports, write: EMS Information, Room 228, 1301 New York Ave. N.W., USDA, Washington, D.C. 20005-4788.

Titles of reports issued by the Crop Reporting Board of the Statistical Reporting Service are printed in black. Complete reports are released, most at 3 p.m., on the dates shown. To request subscription information, write: Crop Reporting Board, Room 5829 South Bldg., USDA, Washington, D.C. 20250.

SDAY	THURSDAY	FRIDAY
	6 Celery	7
	13 Vegetable	14 Milk Production Cattle on Feed Potato Stocks World Food Needs Update
	20 Catfish FATUS[2]	21 Livestock Slaughter Cold Storage Farm Labor Wheat Yearbook
	27 Peanut Stocks & Processing	28 Capacity of Refrig. Warehouses Agricultural Prices Feed

MARCH

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3 Egg Products Poultry Slaughter	4	5 Dairy Products	6 Celery	7 Vegetables Oil Crops
10 Crop Production World Agricultural Supply & Demand	11	12 Turkey Hatchery	13 Sugar & Sweeteners	14 Potato Stocks Livestock Slaughter—Annual Milk Production Cattle on Feed
17 Agricultural Outlook	18 Tobacco	19 Cold Storage—Annual Dairy	20 Hop Stocks Catfish World Agriculture	21 Vegetables Hogs & Pigs Livestock Slaughter Cold Storage
24 Eggs, Chickens, & Turkeys Hatchery Prod.—Annual	25 Floriculture Crops	26 Wool & Mohair	27 Rice	28 Peanut Stocks & Processing
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SDAY	THURSDAY	FRIDAY
	1 Poultry Slaughter	2
urope	8 Vegetables	9 Crop Production World Agricultural Supply & Demand
ction	15 Cattle on Feed Potato Stocks	16 Sugar Market Statistics Agricultural Outlook
	22 Eggs, Chickens, & Turkeys	23 Livestock Slaughter Cold Storage
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JUNE

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
2 Poultry Slaughter	3 Minn.-Wis. Mfg. Milk Final, 1983-85	4 Dairy Products Southeast Asia	5	6 Celery
9 Vegetables Vegetables—Annual Western Hemisphere	10 Crop Production World Agricultural Supply & Demand	11	12 Turkey Hatchery FATUS[2]	13 Milk Production Sugar & Sweetener Yearbook
16 Cattle on Feed Agricultural Resources[1]	17 Agricultural Outlook	18 Dairy	19 Tobacco	20 Catfish Vegetables World Agriculture
23 Hogs & Pigs Livestock Slaughter Cold Storage	24 Eggs, Chickens, & Turkeys Farm Production Expenditures Summary	25 China	26	27 Peanut Stocks & Processing Grain Stocks
30 Egg Products Agricultural Prices Monthly Agricultural Prices Annual				

Cranberries: On a Year-Round Roll

Life is just a bowl of cranberries for Russ Lawton. It's winter now and things have quieted down a bit. Lawton has a little more time to himself than he did during the fall when he was busy harvesting over 80,000 barrels of cranberries from 400 acres of bogs on Cape Cod and the island of Nantucket in Massachusetts.

Lawton's 1985 season was a good one, with production just slightly below 1984, a trend that, it seems, was mirrored throughout the industry. Nationwide, cranberry production fell 2 percent in 1985 to 3.25 million barrels, after hitting a record of 3.32 million barrels in 1984.

Still, the 1985 crop was considered a good harvest, according to economist Ben Huang of USDA's Economic Research Service. It was, Huang says, 9 percent above 1983's harvest and 224 percent higher than the average harvests of the 1950's.

Clearly, Huang says, these increasing cranberry harvests are the result of a consumer demand that's steadily expanded during the last three decades.

Year-Round Appeal

The fact is that 25 years ago, production was 1.34 million barrels, Huang says, and cranberries sold *only* during the holiday season. Growers depended on Thanksgiving and Christmas sales for their incomes, period. But cranberry products with more year-round appeal have changed all that. (Take an ice-cold cranberry juice cocktail, for example.)

Of course, spreading sales out over the entire year has its merits, grower Lawton says, but the cranberry producers don't want to de-emphasize the holidays either.

Almost all fresh cranberries (at least 90 percent), plus 75 percent of the sauce, and 35 percent of all other products are sold between October and December, according to Christine Masclee, director of communications for Ocean Spray, Inc., the largest cranberry cooperative in the nation. Members of this cooperative (including Russ Lawton) account for about 85 percent of all U.S. cranberry production. The cooperative's home office (in Massachusetts) is based in the top cranberry-producing state. Wisconsin ranks next, followed by New Jersey. Cranberries are also grown in Washington and Oregon, but to a more limited extent.

While the industry may be strong now, many producers remember 1959. That was the year the cranberry industry reeled from a virtual consumer boycott after a pesticide, that had been used by a few growers, was found to cause cancer in rats. Even though industry officials isolated the use of the pesticide and destroyed the contaminated crop, Masclee says, sales fell to levels hardly worth reporting. "This was really the first food scare and it came just before the holidays," she adds. "The industry was just decimated."

It took years to build up again, Masclee says. Ocean Spray (and others) sponsored extensive research into new varieties, production techniques, and products.

It was during the 1960's, Masclee says, that the cranberry juice market really began to take off, and juice blends, such as Ocean Spray's Cranapple®, were introduced. Demand increased with the new products, and growers needed to step up production. They did so, mostly by increasing yields.

Yields jumped from an average 63.4 barrels per acre in 1960 to about 140 barrels today, although the number of acres in cranberries—21,140 in 1960—increased only slightly to 23,820 by 1984. (Wetlands legislation in Massachusetts and Wisconsin restricts the number of new bogs that can be developed.)

Technology: Key to Higher Yields

Two technological developments are responsible for the greatly increased yields, according to economist Bernard J. Morzuch. Morzuch has done extensive research at the University of Massachusetts in Amherst in crop forecasting and the economics of producing cranberries. First, he says, the introduction of sprinkler systems in the early 1960's substantially increased yields by preventing berry loss from frost damage.

In the low-lying areas where cranberries are generally grown, Morzuch says, growers can face frosts as late as May or as early as August. Frost kills the berries and can damage the vines. If there is the danger of a frost, growers turn on the sprinkler system (which is also an irrigation system) to flood the berries. The water acts as a heat source, protecting the berries from freezing.

The same sprinkler system can be used to apply pesticides and fertilizers, reducing labor and application costs, Morzuch adds.

Another yield-saver that's been widely used, but only since the late-1970's, is the wet harvesting method. Before then, cranberries had traditionally been harvested dry.

Morzuch explains the difference: With the dry method, people actually pick the berries and the harvest is fairly labor intensive. It's now used only for cranberries that are going to be packaged for the fresh market. Dry-harvested berries command a premium price for growers, Morzuch adds, but yields are an average 15 to 20 percent lower than for berries harvested using the wet method. The reason, Morzuch says, is that when the berries are harvested by hand, there is more potential for damage from " a bunch of people stomping around in the bogs. Cranberries grow on vines and can be fairly difficult to work around."

The wet harvest is more efficient in preserving more of the crop, but wet-harvested berries must be used in processing (juice, sauce, jam, etc.) because they tend to retain some moisture which makes them unsuitable to be packaged dry, for the fresh market.

Using the wet-harvesting method, producers first flood their bogs. Then, the berries are knocked off the vines by mechanical pickers. They are then "corralled" by floating booms in the water and pushed along with rakes to conveyor belts, which dump the berries into shipping crates. □

China Applies Brakes to Agricultural Miracle

The government incentives to foster crop production worked well: Production jumped 49% between 1978 and 1984.

Agricultural production in China jumped 49 percent between 1978 and 1984, after growing very slowly during the two previous decades. As a result, China has become a healthy new contender in world agricultural markets. But, in 1985, the new contender lost a little bit of punch as China's crop production dropped for the first time since 1980.

Weather, particularly flooding in the northeast, was one major reason for the output decline, according to USDA economist Fred Surls of the Economic Research Service. "But there was also a significant reduction in the government incentives that had stimulated grain and cotton production in the first place," Surls says.

The incentives to foster crop production were actually government guarantees, Surls says. Until this year, the government promised to purchase whatever crops farmers had to sell, and at set prices which steadily increased over the years. Between 1978 and 1983, average farm prices for grains and cotton shot up by 50 percent.

Something of a Mismatch

The initial objective of the incentive program was attained: Production increased. But, over time, it became increasingly apparent that the program was something of a mismatch. "The infrastructure was not able to keep up," Surls says. Not only did farmers produce more than the government wanted to buy, they produced far more than China's marketing system could efficiently handle. There simply wasn't sufficient transportation, storage, and processing capability.

And because retail prices were held down, the government's budgetary outlays jumped enormously. "There was also a discrepancy between the quality of what was being produced and the quality of what consumers actually wanted to purchase."

Take cotton as an example. In recent years, many farmers, particularly those in the northern part of the country, expanded production of higher yielding cottons developed by China's researchers. These varieties, however, have short fibers and poor tensile strength, making them undesirable for mill use. Even so, through 1984, these varieties were widely grown, according to Surls. Probably because there was not much of a price differential between the qualities of cotton, farmers concentrated on yields rather than quality.

Because considerable surpluses of higher yielding, lower quality cottons developed through the 1984 season, official purchases of the 1985 cotton crop were reduced at least 30 percent below 1984 crop purchases, as the government backed off from its buy-all guarantee.

In addition, the government has restricted its purchases of grains.

Producers Face New Risks

This situation has brought a new dimension of "producer risk" to China's farmers. "It's the first time many farmers are facing considerable uncertainty on the prices they'll get and, in some cases, whether they'll be able to sell their crops at all," Surls says.

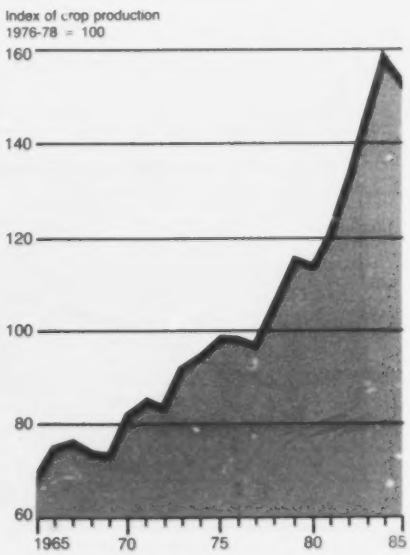
The situation affects most of China's farmers, Surls says, although those who grow oilseeds are one exception. The government is still buying all the oilseeds that farmers can grow. The result is that many farmers who grew corn or cotton are switching to soybeans or other oilseeds, or fruits, vegetables, and specialty crops, and some are leaving agriculture altogether. Another side effect: The rapid increase in the use of fertilizers will slow down, Surls says. This will, in turn, diminish the rate at which yields have been increasing.

There's some good news here for U.S. farmers. China's lower corn and soybean production (despite production incentives, soybean output dropped, too, because of weather problems in the northeast) will translate into less competition in world markets this year. And, over the long haul, China could again become a corn and soybean importer *if* its livestock industry expands as expected (increasing the need for feed grains) and the increases in crop production moderate, also as expected.

For cotton, however, it's another story. China has huge surplus stocks that will fill warehouses for years to come, despite the production declines that economists expect to see. Consequently, China's cotton exports should rise this year, according to Surls, and there are no indications that China's cotton trade will decline in the foreseeable future. "It looks like China is in the world cotton export market to stay," Surls says. □

[Based on information provided by economist Frederic M. Surls of the International Economics Division, Economic Research Service.]

Last Year's Drop in China's Crop Production Was the First Decline Since 1980



Mexico: Still a Top U.S. Export Market

Hampered by the lack of irrigation water and other inputs, Mexican agriculture is still a step behind its American counterpart.

Faced with population pressures and a farm sector that struggles vainly to meet its domestic food needs, Mexico is likely to remain a major U.S. export market, especially for basic, bulk commodities.

That's the word from a pair of economists who say that recent financial problems—fueled by massive foreign debt and falling oil revenues—are only temporary setbacks for a still vigorous Mexican economy.

"Although it will reduce its imports of nonbasic items in the next few years, Mexico will continue to look to the United States for grains and oilseeds, particularly, through the rest of the decade," says Myles Mielke of USDA's Economic Research Service. Mielke recently coauthored an export market profile on Mexico with former ERS analyst Donna Roberts.

Basic commodities—including corn, dry beans, sorghum, wheat, soybeans, and sunflowerseed—comprise the bulk of Mexico's imports from the United States. In fact, Mexico typically takes an average of 80 percent of its farm imports from the United States.

"The United States has sold an average of $2 billion worth of farm goods to Mexico annually since 1980," says Mielke. "That puts Mexico among the top four U.S. markets in the 1980's."

Oil Boom Boosted Imports

Mielke notes that U.S. exports to Mexico first swelled in the 1970's with the discovery and development of Mexico's huge oil reserves.

"This fact, as well as steady population growth, prompted Mexico to rely more heavily on external markets to provide needed food and feedstuffs," he says. "And it didn't hurt that the United States and Mexico share a 2,000-mile common border when Mexico began shopping around."

That proximity had earlier eased the establishment of well-oiled marketing channels, says Mielke.

"Because the United States is Mexico's most important trading partner, a special relationship has developed over the years," he says. "Mexico is also given duty-free entry for some of its exports to the United States."

Mexico's farm exports to the United States—principally coffee, tomatoes and other vegetables, and strawberries—have been above $1 billion a year since 1977. In 1984, the United States purchased $1.3 billion of farm goods from Mexico, 74 percent of Mexico's overall farm exports.

"Traditionally, Mexico has had an agricultural trade surplus with the United States," Mielke says. "That changed in 1980, when farm trade balanced out at about $1.4 billion in favor of the United States."

In each year since then, except 1982, the United States has shown a net surplus in farm trade.

"Mexico's rapidly growing food and feed demands will likely cause the trade balance to remain in the U.S. favor for some time," he adds.

Population Growth Spurs Demand

Spurring such demand has been a 3-percent annual population increase.

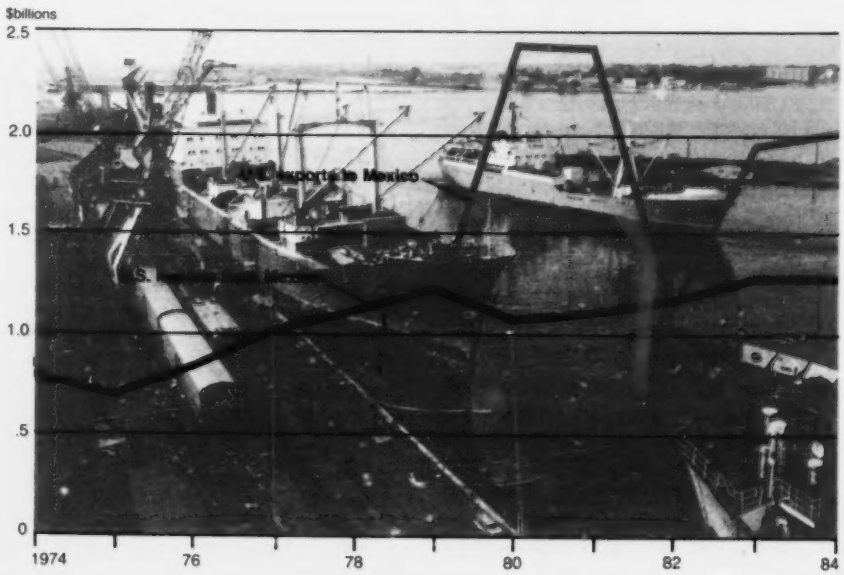
"By the year 2000, Mexico's population will probably exceed 100 million," Mielke says. "Although its population explosion is not uncommon for nations during the course of their development, Mexico's population growth is still remarkable, given its duration and magnitude."

Actual import demand, though, will depend not only on the number of new mouths to feed, but also upon Mexico's ability to work its way out of the present financial crisis—complicated by volatile oil prices and varying interest rates.

And Mexico's needs will depend on nature too. "Highly variable weather will certainly affect Mexican production and, consequently, how much U.S. grain and oilseeds Mexico buys." □

[Based largely on information provided by economist Myles Mielke of the International Economics Division, Economic Research Service, and economist Donna Roberts, formerly of the Economic Research Service.]

U.S. Exports to Mexico Have Been Volatile in the Last Decade, But Still Outpace U.S. Imports from Mexico



Trying To Cope with Massive Debts and Weak Oil Prices

In 1986, Mexico's mounting foreign debt may push past $100 billion for the first time ever.

Next to Brazil, in fact, Mexico now owes more to foreign creditors than any other nation—about $96 billion.

"Mexico's economic difficulties are most vividly reflected in its current balance-of-payments problems," says economist Myles Mielke of the Economic Research Service. "The inflation rate still hovers near 60 percent, and industry remains weakened by a combination of the effects of reduced government spending and huge foreign debt payments."

Economic austerity measures have meant a slowing of economic growth. Mexico's fast pace on the path to development was triggered in the late 1970's when it emerged as a major oil producer.

"As revenues from petroleum exports began to grow, Mexican officials decided to use oil as a lever for more borrowing to pay for investment in public works projects, a larger industrial base, and generous consumer and producer subsidies," Mielke says.

"This rapid growth strategy worked for a few years, but its success was based on the belief that oil prices would continue to rise," he adds. "However, by 1980, prices leveled off."

Interest Payments Soared

At the same time, interest rate payments were soaring on the external debt, largely because loans had been contracted for on a short-term, variable-rate basis. With its trade deficit growing because of lower oil receipts, Mexico was left with less foreign exchange to make interest payments.

The situation soon grew worse when "many Mexicans, anticipating the strains in the balance of payments, lost confidence in the value of the Mexican currency (the peso) and began to send their savings out of the country. More importantly, though, foreign banks that had previously adopted an indulgent attitude toward their Mexican loans began demanding payment."

By the beginning of 1982, the crisis was clearly at hand.

"Interest rates continued to rise as oil glutted the world market," Mielke notes. "The more Mexico's borrowing requirements intensified, the more its creditworthiness deteriorated. By February, the government no longer had sufficient foreign exchange reserves to support the peso, which fell in value by nearly 80 percent against the U.S. dollar."

During the succeeding 6 months, Mexican officials scrambled to sort things out.

"The government tried to regain control of the economy through public expenditure cuts, exchange controls, further devaluations, and finally the nationalization of commercial banks," Mielke says. "Nevertheless, external debt rose to more than $80 billion. In August 1982, Mexico notified foreign banks that it could no longer service its debt. Interest payments alone consumed more than two-thirds of Mexico's oil export income."

Realizing that extraordinary action was critical, Mielke says, "the international financial community came to Mexico's rescue, rescheduling debt payments on a more lenient basis, and Mexico began its long recovery."

Social Costs Staggering

According to Mielke, the social costs of Mexico's austerity programs have been staggering.

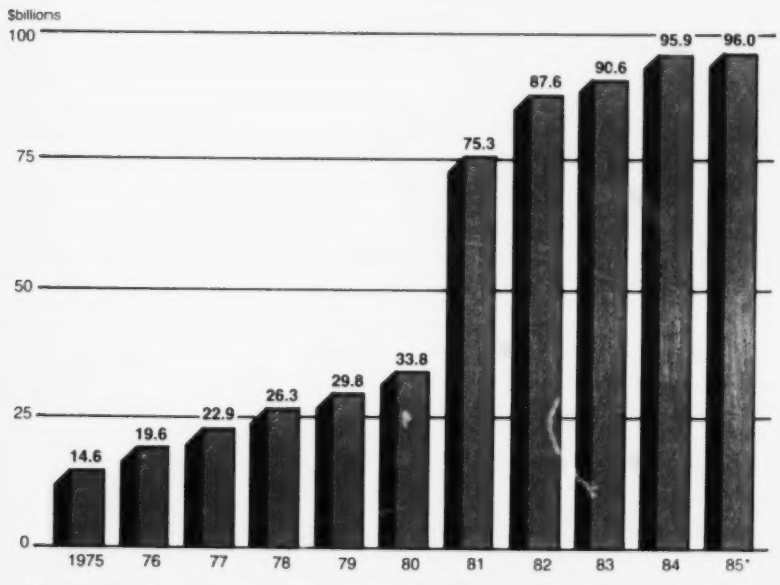
"Unemployment rose sharply and further job losses were averted only by a substantial decline in real wages. The minimum wage was increased by 45 percent in 1983, but the cost of living jumped by more than twice as much," he says.

Mielke goes on to say that "Mexico's present economic situation can only be described as fluid. Even so, Mexico has been the most successful Latin American nation in resolving its debt rescheduling dilemma and reactivating its economy. And after 3 years of cuts in imports and public sector expenditures, the Mexican economy expanded modestly in 1984."

Although the outlook remains brighter than it was a few years ago, Mexico's economic fortunes are still tied to oil exports.

"And that will produce a mixed bag of consequences for the economy," Mielke says, "as it has in recent years."

Mexico's Foreign Debt, Second Largest in the World, Has Jumped $80 Billion Since 1975



*Estimated

AGRICULTURAL ROUNDUP

A Better Year for Hungry Nations

Global crop production prospects are bearish for U.S. farm prices, but large harvests probably mean a better year for many nations that worry about food shortages.

"Increased world food supplies will mean a significant improvement in the availability of food to hungry nations," says economist Ray Nightingale of USDA's Economic Research Service. "Serious production shortfalls, however, are expected to persist in a number of African, Asian, and Caribbean countries."

Nightingale's assessment is based on the first quarterly update of the annual ERS study on world food needs and availabilities. The study provides a detailed look at food-deficit nations—nations that are unable to produce or purchase enough food to meet their minimum needs.

For the 1985/86 crop year, 69 developing countries will require around 9 million tons of food over and above their normal commercial imports. This is the projected amount needed to maintain consumption at current levels, says Nightingale, who directed the ERS study.

The current forecast represents a drop of 2.7 million tons from 1984/85's food needs. According to Nightingale, the reduction results largely from brighter production prospects in Africa, where rains have finally returned.

World food supplies are up, but severe food shortages persist in many parts of the world.

Gleanings

The government is losing money by taxing farm income, according to economist Ed Reinsel of the Economic Research Service. The fault, he says, lies partly with tax breaks designed to help those who farm for a living. Trouble is the write-offs can also be very attractive to those who get into farming for other reasons.

. . . with help from the IRS, Reinsel compiled the following tax data for 1982, the latest year for which such information is available. Some 2.7 million farm tax returns were filed by individuals, he says, and two-thirds of them reported net farm losses for tax purposes. Their reported farm losses amounted to $18 billion. The remaining one-third of individual farm tax returns reported positive net incomes from farming that totaled about $8 billion. Together, the two groups reported off-farm incomes of nearly $65 billion.

. . . and guess what. Those with the positive farm incomes paid an estimated $1.5 billion in taxes on their $8 billion of net farm income (in addition to taxes on other income). Those with net farm losses paid $7.6 billion in taxes on their nonfarm incomes, but they would have paid about $12.9 billion had their farm losses not been written off against their nonfarm incomes.

. . . In other words, while the government collected $1.5 billion in taxes on farm incomes, it lost a potential $5.3 billion in taxes on the nonfarm incomes of other individuals with farming interests. "If farm income had not been taxed and farm losses had not been used to reduce taxes on other income, the U.S. Treasury would have been $3.8 billion richer," says Reinsel. The figure might be even higher, but Reinsel was unable to obtain comparable tax data for the 180,000 farm partnerships and corporations.

. . . it is virtually impossible, he adds, to sort out the writeoffs that result from hobby farms or tax avoidance schemes from the "real" economic losses to individuals usually thought of as farmers. Another problem with tax breaks is that they often offer the greatest benefits to those with the highest incomes. Not surprisingly, individuals reporting $60,000 or more in taxable incomes—before subtracting farm losses—did the most sheltering. Their tax bill would have jumped by $2.7 billion if farm losses hadn't been written off.

. . . however, sheltering nonfarm income with farm losses isn't unique to the wealthy. It occurs in all income groups and appears to be increasing. In 1982, some 35% of individual farm

As Tax Rules Stand, the Treasury Loses by Trying To Tax Farm Income

	Number of returns	Farm income or loss	Estimated tax on total income, with farm net income or loss . . . Included	Excluded
Tax returns with:				
Positive farm net	983,000	$8 bil.	$3.6 bil.[1]	$2.1 bil.
Farm loss	1,709,000	−$18 bil.	$7.6 bil.	$12.9 bil.
All returns	2,692,000	−$10 bil.	$11.2 bil.	$15.0 bil.

[1]Includes $1.5 billion in tax on farm income and $2.1 billion in tax on other income. Estimate assumes that farm income is added to other income.

Although the picture has improved somewhat, deficits are still very large. In fact, the 9-million-ton figure is based only on maintaining "status quo" consumption levels rather than on meeting minimal nutritional standards. To meet such standards in 1985/86, the world's hungry nations would need around 18.6 million tons of food—twice the status quo level.

"Even if donor nations could provide all that is needed to bring average diets to a basic nutrition level," Nightingale notes, "food-deficit nations would be able to absorb only about 15 million tons because of physical constraints."

Hampered by poor roads, shortages of trucks, and logistical bottlenecks in moving grain from ports, these countries sometimes find it as difficult to distribute the food once it arrives as it was to obtain it in the first place.

Africa is a case in point. The world's awareness of the continent's crisis did not emerge as quickly as it might have—and difficulties in delivering food have prolonged Africa's agony.

"With the world's attention focused on Africa, large amounts of food aid have been allocated to the continent," says Nightingale.

Africa's estimated need for more than 4.5 million tons of food in 1985/86 to keep up current consumption levels outstrips food needs in other parts of the world—but still signifies an improvement over 1984/85 when its needs were 1-to-2 million tons greater.

Asia's status quo needs are also large, projected at 3.5 million tons of food for 1985/86. Latin America needs about 347,000 tons of food, and the Middle East needs 714,000 tons, says Nightingale.

The U.S. government funded more than $2 billion worth of food assistance in fiscal 1985, but spending is likely to go down in the current year. In fiscal 1985, Nightingale estimates U.S. food shipments at 7.3 million tons worth $2.2 billion. For fiscal 1986, federal expenditures on U.S. food aid are expected to be about $1.7 billion.

Other major agricultural producers—Australia, Canada, the European Community, and Japan—also make large food donations. In fact, total U.S. and foreign food assistance given in the form of cereal grains from July 1984 to June 1985 was estimated at 11.7 million tons, surpassing for the first time the 10-million-ton target set by the World Food Conference in 1974.

"The increased aid is certainly a reflection of the African crisis and the availability of commodities in major producing nations," says Nightingale. "Along with the food assistance, however, is a growing recognition that people in Africa and Latin America will cease to starve only when civil strife is ended and governments invest more in agriculture."

proprietors reported negative incomes from farming. In 1982, the figure was 65%. True, 1982 was not a high income year for farmers, but the percentage of farmers reporting losses has been rising steadily for at least two decades, Reinsel notes.

. . . what is the solution? It seems Uncle Sam could increase tax revenues, cut the federal deficit, put an end to tax-loss farming, and make life easier for some struggling farmers—all at the same time—simply by eliminating individual federal income taxes on farming operations. But, no, Reinsel does not expect Congress to take such a dramatic step.

. . . rather, he is pointing out the significant price attached to current tax benefits that reward investment in agriculture, and other industries as well, even when a primary purpose of the investment is to shelter income and reduce taxes. "In effect," says Reinsel, "this amounts to a subsidy through the tax system, and much of the subsidy goes to individuals at higher income levels, most of whose income comes from outside agriculture. Their combination of nonfarm incomes and farm losses suggests that, for many of them, the motivation for investing in farming may have little to do with earning a living off the land."

A sharp cut in farm program loan rates would hurt some American farmers, but it could put a great many foreign producers out of business. So speculates economist Thomas Vollrath of the Economic Research Service. He notes that the United States has a significant comparative advantage in agriculture—an advantage obscured by loan rates that have held U.S. prices above market levels since import demand began to weaken in the early 1980's. Farmers abroad are currently encouraged to produce for world markets, in part because they can undercut high U.S. loan rates. Foreign producers, he suggests, would face a formidable challenge if they had to go head-to-head in free competition with efficient U.S. farmers.

. . . agriculture's future prosperity is linked to international markets and our ability to compete in those markets, adds Vollrath. The desire to reduce U.S. loan rates gradually to cushion the adjustment for American farmers is understandable, he says. However, he cautions that too gradual an adjustment carries significant risks for our competitive position. "The longer we provide a protective umbrella for foreign producers with loan rates above market levels, the more cost competitive they can become." In effect, he says, we may be indirectly taxing our agriculture while subsidizing the expansion and modernization of farm sectors abroad.

Wheat flour accounts for less than 1% of the value of all U.S. agricultural exports, but according to recently released United Nations data, America was the world's leader in wheat flour exports in 1983. "The U.S. market share was just over 29% in 1983, doubling 1982's exports," says ERS economist Stephen W. Hiemstra, "but the increase was due almost entirely to a special subsidy program of sales to Egypt." Since then, France has been Egypt's major wheat flour supplier, according to ERS economists, and this may have pushed the United States into second place in world wheat flour trade behind the European Community.

REPORTS IN THE NEWS

Ties That Bind

Farming has always been tied to the larger economy here and abroad, but the links have multiplied and grown much closer in recent decades, according to senior economist Alden Manchester of the Economic Research Service.

The reasons, he says, include a world economy that has become more interdependent, business cycles that have become more global in nature, and farmers who have become more dependent on purchased inputs, capital-intensive technologies, borrowed money, and export markets.

Manchester examined these linkages, why they evolved, and how closely they bind agriculture and other sectors of the U.S. and world economy together. Here are just a few of his observations:

- The share of the U.S. labor force in farming declined from 84 percent in 1810 to 40 percent by the turn of the century. Today, only about 3 percent of the labor force is engaged in farming. In 1869, 71 percent of consumer income was spent for products originating on U.S. farms. In 1983, only 18 percent of income went for such products.
- The food and fiber system is one of the largest sectors of the U.S. economy, accounting for nearly 20 percent of the nation's GNP. However, the system now requires many more nonfarmers than farmers.
- The transformation of the U.S. economy changed farming from a nearly self-sufficient enterprise to the specialized, interdependent system of today. Much of the work and many of the functions formerly performed on farms have shifted to nonfarm firms.
- Linkages between farming and financial institutions have been growing in importance over the years. In the early 1950's, net borrowing (new loans minus repayments) financed about 11 percent of annual capital investment in farm assets. By 1982, the figure had risen to 49 percent.

Agriculture's Links with U.S. and World Economies *by Alden Manchester. (Published September 1985; 49 pages of text, charts, and tables; GPO Stock Number 001-019-00409-6; $1.50.)*

Food Grain Buyers and Sellers

The volume of world wheat trade climbed from 36 million metric tons in 1962 to almost 100 million tons in 1982 and 1983. The U.S. share of world wheat exports was 38 percent in 1983—no change from 1962, but down from the 45.7-percent share captured by the United States in 1981.

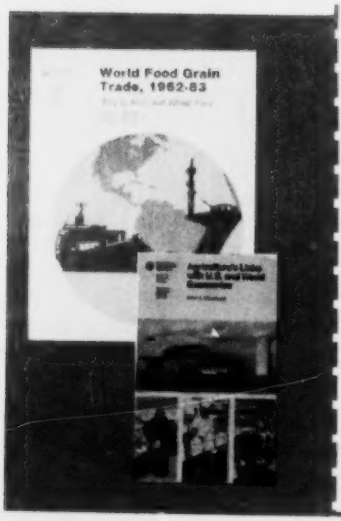
Through most of the 1960's, India was the largest importer of U.S. wheat. In 1983, our largest single customer was the Soviet Union, but the USSR bought more wheat from Canada and Argentina than it did from the United States.

World trade in rice grew from 6.3 million metric tons in 1962 to 11-13 millions tons a year in the early 1980's. In the same period, the U.S. share of world exports rose from less than 20 percent to more than 25 percent before falling back below 20 percent in 1983. The United States was the third largest rice exporter in 1962. By the early 1980's, the United States and Thailand were switching back and forth between the number one and number two spots.

World trade in wheat flour was only about a third higher in 1983 than it was in 1962. The United States—the largest wheat flour exporter in the 1960's—is now more often in second place behind France.

Year-by-year statistics on world trade volume in wheat, rice, and wheat flour are available in this new statistical bulletin published by the Economic Research Service. The bulletin carries more than 70 pages of tabular data covering 1962 to 1983. Figures for each year are broken down by major importing regions and major exporters, linking both the origin and destination of wheat, rice, and wheat flour imports.

World Food Grain Trade, 1962-83 *by Arthur Mackie, Stephen Hiemstra, and Stacey Rosen. (Published October 1985; 89 pages, mostly data tables; GPO Stock No. 001-019-00415-1; $3.50)*



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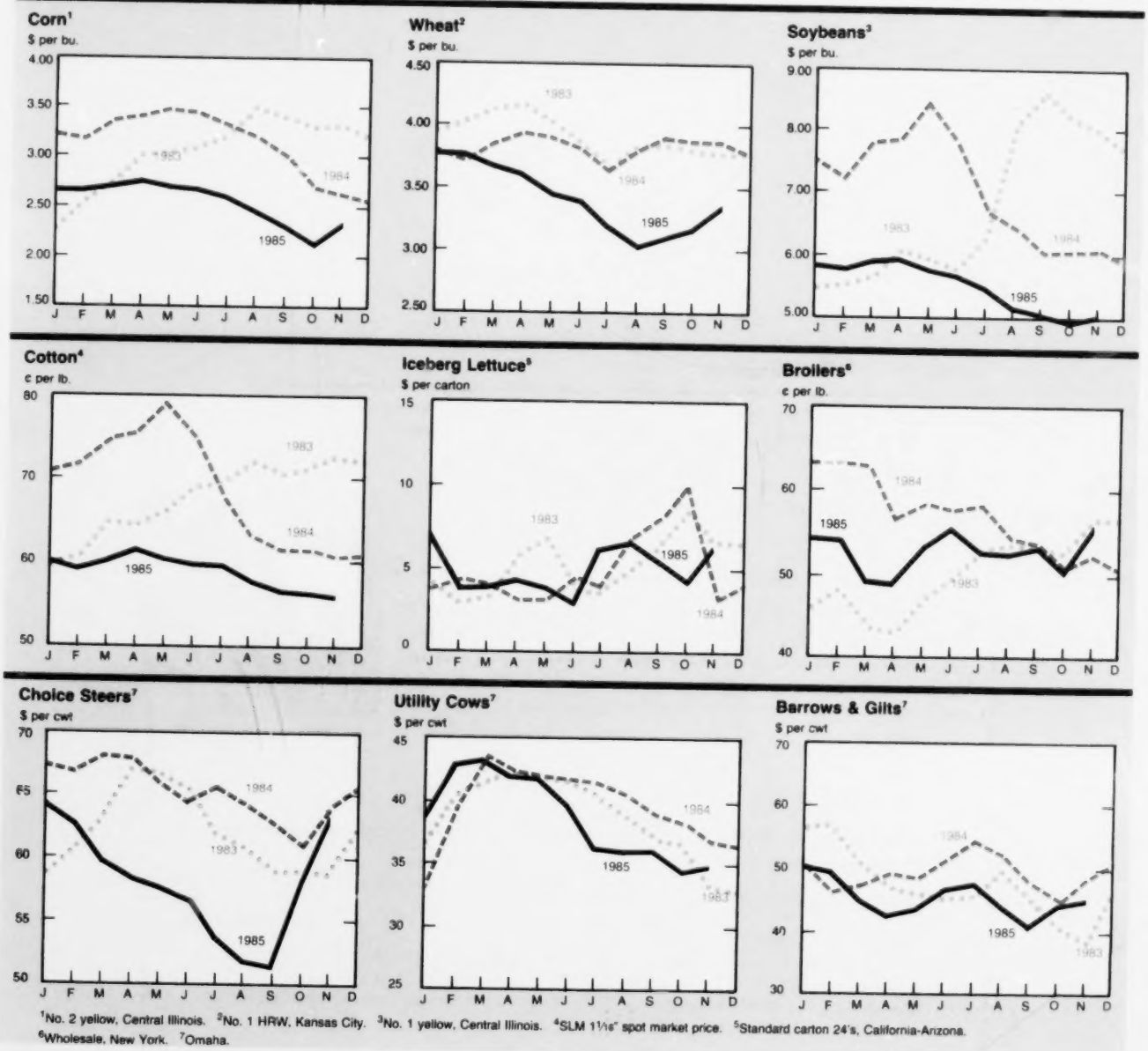
Monthly Price Monitor

USDA's November index of farm prices increased 2.4% from October but was still 7.4% below its year-earlier level. Corn gained 22¢ to $2.32 per bushel, wheat climbed to $3.34 (the highest price since June), and soybeans were back above $5. Cotton held near October's level. Lettuce gained about $2 per carton, topping the $6 mark. In the meat animals area, broiler prices recovered to 55.5¢, matching June's high for the year. Choice steers jumped $5 per cwt to $63.13—the first time since February that prices exceeded $60. Utility cows rose slightly above October's low, and barrow and gilt prices inched above $45. All prices shown are monthly averages.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1⅛" spot market price. [5]Standard carton 24's, California-Arizona. [6]Wholesale, New York. [7]Omaha.

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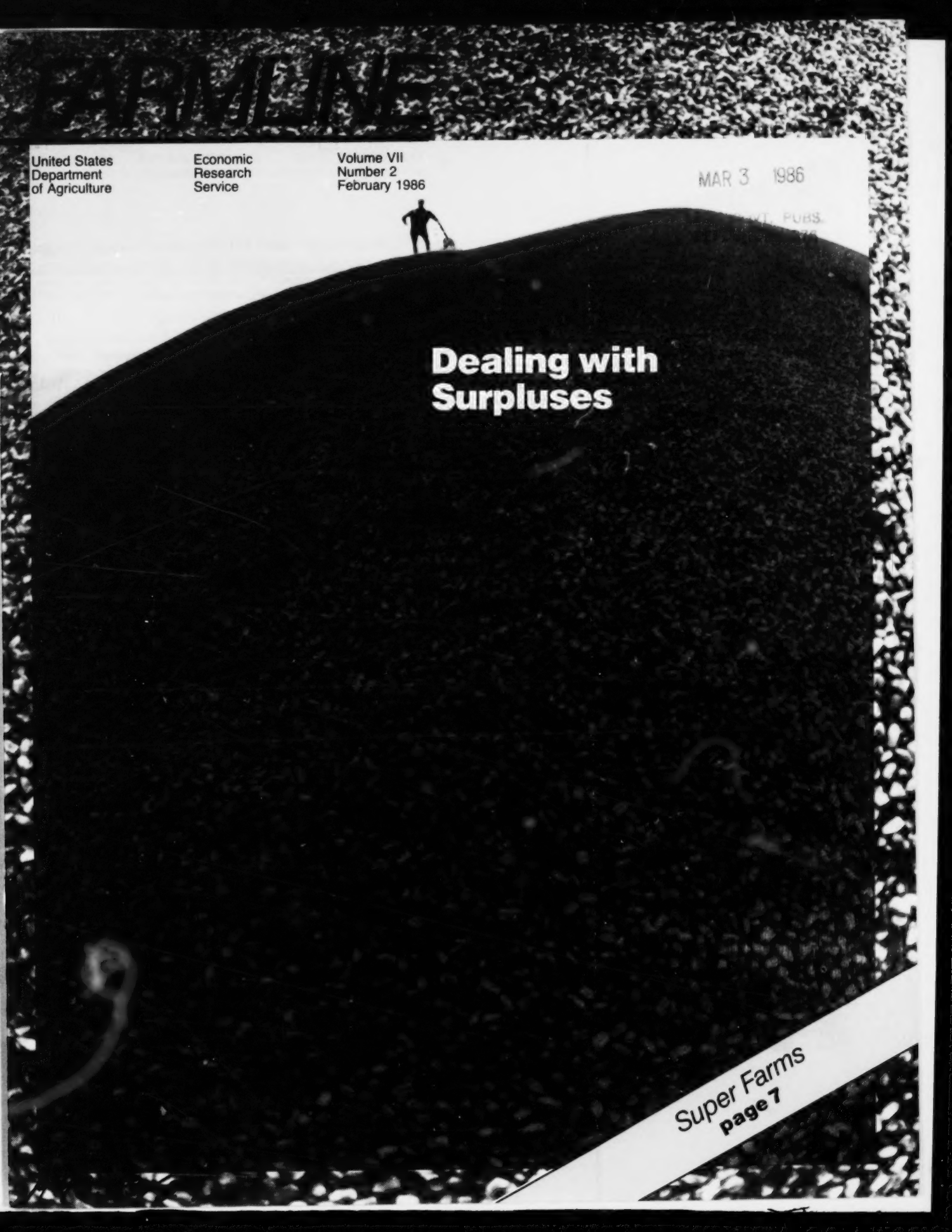

Dealing with Surpluses

Super Farms
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PERSPECTIVES

SIGNUP FOR THE NEW CONSERVATION RESERVE PROGRAM is expected to begin next month. It has the ambitious objective of taking millions of acres of highly erodible farmland out of production for a decade or more. Erosion is considered a serious problem on more than a third of the nation's farmland. The reserve may also help trim surpluses of cotton, grains, and oilseeds. Here's an outline of how the program will work:

Farmers accepted into the reserve sign a 10-year contract with USDA and grow a ground cover instead of crops. The land must be put into perennial grass, wildlife plantings, windbreaks, or trees. Harvesting crops or grazing livestock is not allowed. In return, the government pays farmers a yearly rent on the land, as well as half the initial cost of establishing the ground cover.

Up to 45 million acres may be enrolled in the reserve from 1986 through 1990. For the 1986 crop year, USDA expects to enroll at least 5 million acres.

Which land is eligible? Nationwide, around 70- 100 million acres of cropland (out of 421 million) might meet the eligibility criteria, according to USDA. Specifically, the land must have been used for annual crop production during any 2 years from 1981 through 1985. And the land must be considered highly erodible. The criteria center around the eight land classifications developed by USDA's Soil Conservation Service (SCS). (Generally, the higher the class number, the more serious the soil problems.) Most likely to be enrolled in the reserve program will be: cropland in classes II through V that is eroding at more than twice USDA's accepted tolerance level (the rate at which soil forms); and cropland in classes VI, VII, and VIII, which is generally viewed as too steep or too shallow for farming.

To find out what class your land is in, consult the soil survey for your county. If you are not sure of your land's erosion rate, request assistance from your local SCS technicians.

How do you sign up? You submit a bid of the amount of rent you'd expect the government to pay you for taking your land, or part of it, out of production. How do you determine the amount you should bid? The answer is highly individual and depends (among other things) on how much of a return you think you'd get from growing a crop on the land. Farmers will be bidding against other farmers for acceptance into the program, but only within their own states. The lowest bids are most likely to be accepted, and there is a maximum enrollment of 25% of the cropland in each county.

Other information you'll need for your application includes your land's location, its acreage, a cropping history for 1981 through 1985, and a list of the conservation programs you've used on the land since 1981. Specific application requirements will be available from local offices of USDA's Agricultural Stabilization and Conservation Service (ASCS) in early March.

Rental payments are limited to $50,000 per year, per producer. But even if you receive the maximum payment, it won't affect the amount or type of other government payments you may be eligible for. If you want to back out of the contract a few years down the road, you can, but with considerable penalties: You would have to repay, with interest, all the rental payments you'd received plus the government's half of developing the ground cover.

When your contract expires, you may return your land to crop production. However, by 1990, all farmers cropping highly erodible land will have to follow an approved conservation plan in order to participate in most USDA farm and commodity programs.

Special Alert to Readers: The Economic Research Service has published a summary of the major provisions of the new farm bill. As long as supplies last, single copies are available free of charge. Write to: Farm Bill Report, ERS-USDA Room 237, 1301 New York Ave. N.W., Washington, D.C. 20005-4788. Ask for: *The Food Security Act of 1985*, AIB-497.

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The 1985 farm bill represents an experiment with a new strategy for dealing with surpluses. The question is. Will the experiment succeed where past efforts have failed?

Super Farms: Giants of Agriculture *by Doug Martinez* 7

Their numbers are growing, and their role in agriculture is already far greater than the numbers might suggest. Economist Paul Velde profiles the "super farms," those operations that gross $1 million or more a year.

Vietnam's Search for Recovery *by Mark Brohan* 10

The Vietnam war ended a decade ago, but Vietnam is still fighting a battle for economic recovery.

A Lean Hog Industry Faces Lean Times *by Ben Blankenship* 12

The hog industry is one of the most efficient in all of agriculture. But even efficiency hasn't protected the industry from one of the worst slumps in recent memory.

Southeastern Trend Favors Less Till, No-Till *by Ellen Banker* 13

Southeastern farmers are rapidly adopting conservation tillage practices, according to USDA economist Lee Christensen, who compares the tillage trends in 1973 with those in 1984.

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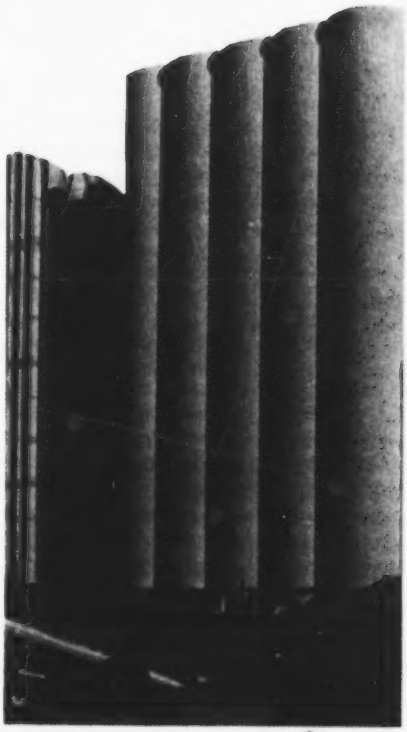

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The Farm Bill Vs. the Surpluses

So far, U.S. efforts to deal with surpluses have largely failed.

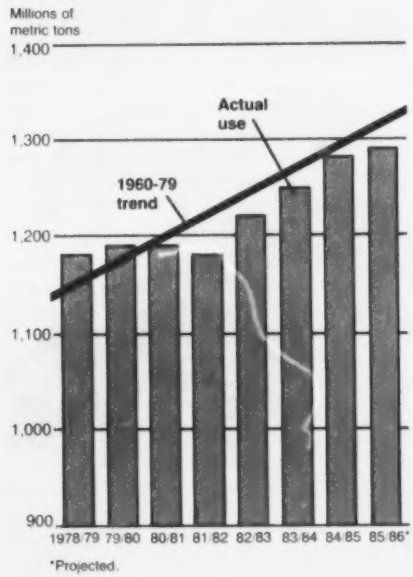
Growing crop surpluses are evidence of the wide gulf that has developed between U.S. agriculture and its markets. A move toward closing this gulf had to come sooner or later, according to two analysts of USDA's Economic Research Service.

If the 1985 farm bill hadn't taken a step in that direction, policymakers would only have postponed the inevitable, claim economists Sam Evans and Keith Collins.

"The reason is simple," Evans says. "Realignment with the demands of the marketplace has been the history of agriculture and of every other industry that has significantly deviated from competitive price and production levels. In recent years, we've seen it happen in oil, airlines, and automobiles."

Evans and Collins contend that when wide discrepancies persist, they create two problems. Policies unresponsive to market demand are costly to maintain, and rising costs eventually generate a backlash from taxpayers, consumers, or producers. In addition, competition ultimately emerges to undermine efforts to sustain nonmarket conditions.

World Wheat and Coarse Grain Use Continues To Fall Below Trend



*Projected.

Like the farm legislation of 1981, the new farm bill is an attempt to respond to current and prospective economic conditions in agriculture. It is the conditions, however, that have changed so radically.

The reality we face today, says Evans, is that U.S. and world agriculture has production capacity well in excess of the demand evidenced in the marketplace. That excess capacity is not likely to disappear anytime soon, and it is almost the exact reverse of what was expected just a few years ago.

From Perceived Scarcity to Surplus

"In 1981, the main concern was whether we would be able to produce enough to feed a hungry world," he says. "After all, the 1970's brought unprecedented growth in world grain consumption and trade, and the United States was believed to be the country with the greatest potential to expand production."

Other concerns at the time centered on a stubborn inflationary spiral and rising farm production costs. In the 1981 farm bill, price supports were established based oh the assumption that high rates of inflation had become a long-term fixture of the economy.

"Instead," says Evans, "inflation was brought under control, farm production costs have risen far less than anticipated, and demand has faltered. Trade forecasts are as pessimistic today as they were optimistic back then."

In fact, U.S. agricultural export earnings are projected to drop to around $29 billion this fiscal year, down from a high of $43.8 billion in 1981 and the lowest level since 1978. Volume may decline to around 120 million metric tons, down from more than 160 million tons in 1980 and 1981.

Evans traces the beginning of the surplus back to 1980. A summer drought that year led to tight supplies, setting the stage for large plantings in 1981. Given the bullish trade outlook inherited from the 1970's, an acreage reduction program was thought to be unnecessary. The drought also provided the impetus for the expansion of winter wheat in the South, most of which is double-cropped, he says.

The following year, production was maintained, even in the face of declining prices. Demand had been weakening because of a world recession, a strengthening U.S. dollar, high real interest rates, and debt problems abroad. At the same time, many importing nations were taking steps toward greater self-sufficiency, and other exporting nations were responding to production incentives provided, in large part, by high U.S. price supports and the strengthening dollar.

Misled by Trends

As a result, world consumption, production, and trade followed very different paths from the ones suggested by the trends set between 1960 and 1979.

Forecasters say the current 1985/86 season will be the sixth year in a row in which combined world wheat and coarse grain consumption will be below the level indicated had the 1960-79 growth trend continued. This will also be the third year since 1980/81 in which world wheat and coarse grain production is above the 1960-79 trendline.

During the 1960's, world wheat and coarse grain trade grew at an average rate of slightly over 2 million metric tons a year. In the 1970's, the rate jumped to 8.7 million tons a year, primarily because of the entry of the USSR, Eastern Europe, and China into international grain markets. It was the 1970's that fed the optimism for the 1980's, Evans recalls.

The expectations were unfulfilled. World trade in wheat and coarse grains has actually dropped—from about 202 million metric tons in 1980/81 to a projected 185 million in 1985/86.

Together, these developments—expanding production, weak growth in demand, and declining trade volume—have created a serious surplus problem for many of the world's exporters, and particularly for the United States.

"By the end of 1985/86," says Evans, "global stocks of wheat and coarse grains could be equivalent to more than 21 percent of annual world use, the highest ratio since the late 1960's. The only nation consistently attempting to cut production—the United States—is expected to be holding about 55 percent of world stocks. That's far out of proportion to our roughly 25-percent share of world production and well above the 35-40 percent share of world stocks held by the United States in the late 1970's."

Within the United States, the stocks-to-use ratio has climbed sharply for both wheat and feed grains. Our wheat stocks at the end of the 1980/81 season were equivalent to 43 percent of that year's total use, including both U.S. domestic use and exports. The ratio at the end of the 1985/86 season is projected to be around 83 percent. (According to Evans' colleague, economist Keith Collins, the wheat surplus will be large enough "to feed each man, woman, and child in America one loaf of bread every day for a year.") For corn, the major U.S. feed grain, the stocks-to-use ratio has risen from 14 percent in 1980/81 to a projected 43 percent this season.

Efforts Backfire

So far, U.S. efforts to deal with surpluses have largely failed. "Our attempts to cut production, maintain price supports, and isolate surpluses from the market tended to provide an incentive for other nations to increase production and let the United States hold the surplus stocks," says Evans.

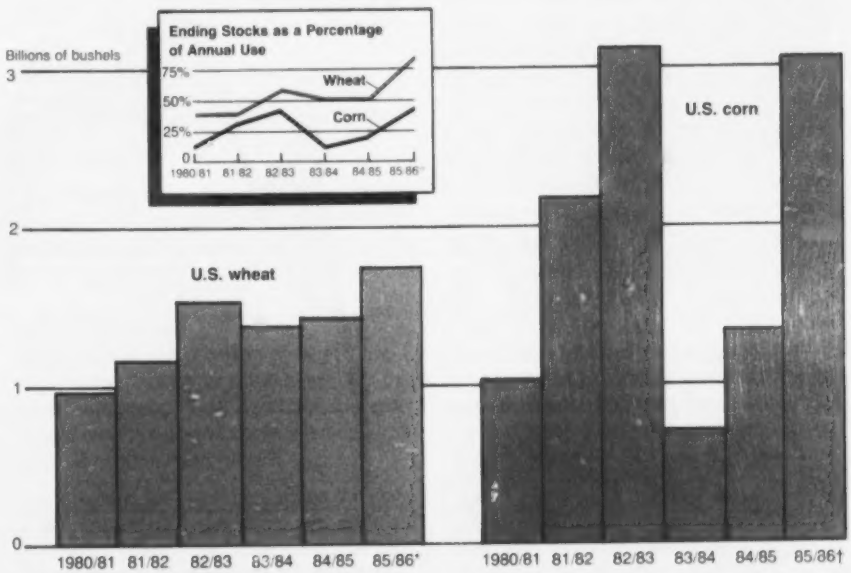
In wheat, for example, the United States has cut production in 3 of the last 4 years, while production in the rest of the world continued to rise until the 1985/86 season.

"Because our competitors maintained or increased their production surpluses while production deficits among the importing nations were shrinking, the result," says Evans, "has been price wars and increased subsidies as exporters attempt to maintain their market shares. The United States has been the big loser in the trade war because of the strong dollar and its price support and acreage reduction programs."

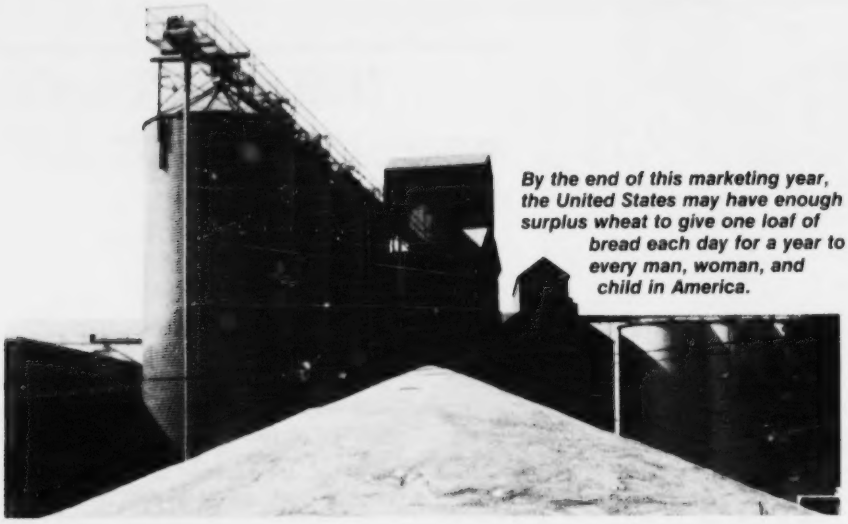
Whether the situation will soon improve is still open to question, adds Collins.

"Current crop surpluses, here and abroad, are the result of many interacting factors. A number of these could reverse them-

To Succeed, the New Farm Bill Must Reverse the Buildup in U.S. Grain Stocks



*Ending stocks projected for May 31, 1986, based on mid-December 1985 USDA forecast. †Ending stocks projected for September 30, 1986, based on mid-December 1985 USDA forecast. "Projected.



By the end of this marketing year, the United States may have enough surplus wheat to give one loaf of bread each day for a year to every man, woman, and child in America.

selves in coming years. Income growth around the world could pick up, the value of the dollar could decline, or weather could be less favorable than it has been," he says.

"However, other factors, such as excess capacity based on U.S. and foreign productivity gains, are not likely to reverse. Export markets will remain highly competitive, and growth in world consumption will not translate into the rapid trade expansion experienced during the 1970's. This means the battle for market shares will be intense, and U.S. prices will have to be competitive."

Choosing Among the Options

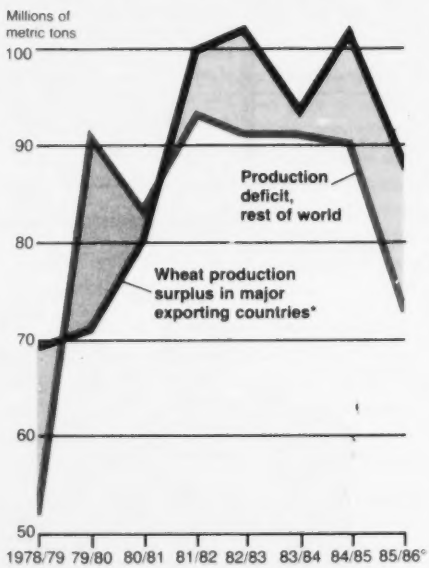
It was this realization, says Collins, that overshadowed deliberations on the 1985 farm bill. In very general terms, the farm policy options facing lawmakers involved four alternatives for dealing with surpluses: (1) letting both farm prices and production adjust to the market, as the Administration had originally proposed; (2) fixing both prices and production, essentially turning back the clock to New Deal-era policies; (3) supporting prices and letting production adjust, which was basically the 1981 farm bill policy; and (4) curtailing production and letting prices adjust.

Congress debated the various alternatives, but the choices were soon narrowed down, Collins explains. Policies that would affect neither price nor production were judged as too damaging in the short run for an already-depressed farm sector. Policies that would "manage" both price and production were judged as too costly for the entire economy—and for the long-term competitiveness of American farmers. The policy of fixing price and letting production adjust is what led to current surpluses, and it too was rejected.

The decision to curb production and let prices adjust to market demand left, of course, a number of other issues that had to be resolved, including how much prices should be allowed to fall and to what extent government should be involved in restraining production.

In a sense, say Evans and Collins, the 1985 farm bill represents an experiment. The hypothesis is that lower loan rates will stimulate exports, discourage further production gains abroad, reduce U.S. surpluses, and raise farm incomes. To limit the risk to the farm sector and allow time for it to adjust, target prices for wheat and feed grains are initially frozen and then allowed to drop gradually.

Production Surpluses of Major Wheat Exporters Remain Well Above Production Deficits of Importers



*United States, Canada, Australia, Argentina, and European Community. Surplus defined as production in excess of exporters' domestic needs. eProjected.

The hypothesis is that lower loan rates will stimulate exports, discourage further production gains abroad, and reduce U.S. surpluses.

However, dealing with surpluses by lowering loan rates, maintaining target prices near current levels, and using acreage reductions and a long-term Conservation Reserve to cut surpluses has some drawbacks, Evans notes. It will not be cheap, nor will it prevent continuing financial stress in the farm sector.

It may also require large acreage diversions to offset the production incentives inherent in maintaining high target prices. Finally, he says, it raises a question about the large U.S. stocks isolated from the market. Stocks tied up in the farmer-owned reserve cannot be released until prices reach specified levels.

"With wheat, for instance, we're now exporting just about every available bushel that isn't locked up in the reserve or owned by the CCC. A squeeze on 'free' stocks this season and in future seasons could raise prices to 1985 loan levels and above," Evans warns. "That would encourage U.S. and foreign production, curb exports, and possibly prevent a drop in surpluses."

Evans and Collins speculate that the success of the new farm program in eliminating surpluses may vary, depending on the crop. Prospects are best, they contend, for corn and soybeans because underlying foreign demand is strong, foreign competition is limited, and yields are variable. It will be more difficult to cut wheat, rice, and cotton surpluses. "Competition among these crops is intense, and technology is rapidly increasing global productivity," Collins says. □

[Based on material provided by economists Sam Evans and Keith Collins of the National Economics Division, Economic Research Service.]

Super Farms: Giants of Agriculture

If matched against the giants of most other industries, they would barely be noticed. In agriculture, however, they stand out.

Farms with annual sales of $1 million or more belong to a small, but often highly visible, fraternity. They stand out because U.S. agriculture is still overwhelmingly populated by much smaller farms. They also stand out because their role in agriculture is far greater than their numbers might indicate.

The million-dollar-plus operations account for only about 1 out of every 250 U.S. farms, yet they take in more than $1 of every $5 of farm receipts. Together, they control about 47 million acres of land and $52 billion worth of assets.

And their numbers, although small, have been growing.

"Unless farm conditions during the last few years have altered the trend, the million-dollar-and-up farms represent one of the fastest growing sales classes in American agriculture," says USDA economist Paul Velde of the Economic Research Service.

Velde analyzed recently available data from the 1982 Census of Agriculture to construct a profile of these "super farms." Among other things, he found that their numbers increased nearly 50 percent between 1978 and 1982—from 6,290 to 9,190 farms.

Almost half of this growth, he says, was related to inflation and higher prices for farm products. However, many super farms topped the million-dollar mark through increased sales volume, reflecting new investment, expansion, or consolidation.

When combined, both inflation and increased sales volume gave the super farms a larger role in U.S. agriculture. They rang up receipts of $30.3 billion in 1982, 23 percent of total U.S. farm sales. In 1978, the comparable numbers were $20.3 billion, 21 percent of total U.S. farm sales. Total acreage on super farms reached 47.4 million acres in 1982, up 7 million acres since 1978 and 4.8 percent of all land in farms.

Size, Type, Location

Velde notes that super farms are not necessarily the biggest farms in terms of acreage. "There are more than a thousand of these million-dollar farms with fewer than 50 acres," he says. "In fact, one-third of all super farms have less than the U.S. average of 440 acres."

California had fully a fourth of all super farms, followed by Fiorida and Texas.

The explanation relates mostly to the commodities such farms earn their incomes from. Many super farms specialize in livestock, poultry, or egg production, and others grow high-value crops such as oranges, grapes, and commercial flowers.

Of the various commodity classifications, livestock operations accounted for the most $1-million-or-more farms (2,774). Poultry and egg farms were second (1,245), and dairy operations came in third (1,038). Fruit and tree nut farms were next (812), followed by field crop farms, excluding cash grains (774), and vegetable and melon operations (725).

There were 685 horticultural specialty operations and 610 cash grain farms ringing up $1 million or more in sales.

California had fully a fourth of all farms with sales of $1 million or more (2,398), followed by Florida with 643 such farms and Texas with 618 super farms.

Every state has at least a couple of super farms, according to Velde. Those with the fewest farms of $1 million or more in sales in 1982 were Alaska and Vermont.

Is Bigger Better?

"The 1982 Census numbers on large farms," says Velde, "seem to raise again the old issue: Is bigger better? And if the question cannot be phrased so simply, what impacts are likely with larger farms?"

One concern, he says, centers on the consumer impact as super farms comprise an ever larger proportion of the sales and productive capacity in agriculture. Some observers suggest that concentration is unwise and could lead to higher consumer prices.

"Certainly, the United States has seen and survived the big, highly concentrated nature of other industries," says Velde. "In some other industries, we see only a handful of firms. But in agriculture we are still dealing with thousands of firms producing nearly all commodities—far too many to exert monopoly power on food prices."

For their part, some operators of super farms say that consumer prices might actually go down—largely because of the economies of scale they say are inherent in larger firms.

Velde isn't so sure. "Even if larger farms operated more efficiently, the savings may be absorbed in the marketing process and wouldn't necessarily be passed along to consumers," he says.

On the other hand, he does see some evidence of greater productivity and efficiency with large farms. For example, super farms report greater yields for some crops compared with much smaller farms. His analysis shows that corn growers with farms in the $1 million sales class harvested an average of 122 bushels of corn per acre in 1982, compared with 112 bushels for farms in the $100,000 to $249,999 sales class, and 91 bushels for farms in the $10,000 to $39,999 sales class. Farms in the $500,000-$699,999 sales class had yields per acre roughly equivalent to those of super farms. Farms with annual sales of $10 million or more had the highest average yields per acre, nearly 140 bushels.

Moreover, he says, in contrast to previous years, "farms in the million-dollar sales class appear to be more efficient than their smaller counterparts when measured in terms of returns to investment, for instance."

He cautions, however, that the data he examined from the 1982 Agriculture Census only measures the averages of these groups.

"It doesn't mean that every large farm is more productive or efficient than every small farm," Velde says, "or that all large farms are productive or efficient. And it doesn't take into account the relative status of particular commodities or regions of the country." □

AGRICULTURAL ROUNDUP

Gleanings

. . . on economic policy, farm policy, credit, trade, and the rural job outlook excerpted from various speeches presented at USDA's 62nd annual Agricultural Outlook Conference, held December 3-5, 1985, in Washington, D.C.

"WE SIMPLY CANNOT TOLERATE . . . a turndown in the U.S. economy. Any stalling of the U.S. expansion could lead to renewed calls for protectionist legislation, intensifying any downward spiral in world output and agricultural exports. How can we avoid this pessimistic scenario?

". . . The only way to restore vigor to agriculture, manufacturing, and other depressed sectors is to achieve real interest rates and exchange rates consistent with a more balanced economy. Farm policy hasn't caused declining prices for agricultural land and agricultural commodities; budget policy has. So the fate of agriculture is tied to the prospects for reducing deficit spending." *Preston Martin, Vice Chairman, Board of Governors of the Federal Reserve System.*

"(THE FARMER) HAS A SPECIAL CASE and, therefore, special measures are justified. First, unlike factories, you cannot just switch machinery on and off to adjust production to market demands. It takes time and care to make adjustments. Second, farming is the lifeblood of many regions (and) when farms close down, it has a compounding effect . . . on the whole community . . . Third, farming by its very nature is not mobile. Fixed to the land, buildings, and equipment, it cannot be moved or transferred to some other place.

"Fourth, once the farming and rural infrastructure is damaged or destroyed, it will be very difficult and costly to rebuild it. And yet the time will surely come when agricultural production will have to be raised to meet the increased demand of both people and industry . . . People can do without many things, but certainly not without food . . . Food security is therefore a national as well as an international responsibility, the cost of which must be borne by governments and not by farmers." *Baron Heereman, President, International Federation of Agricultural Producers.*

"DO ALL THE SIGNS point to nothing but struggle and pain for the farm sector in the years ahead? I think not . . . The history-making move toward lower loan rates . . . and the recent declines in the value of the dollar are glimmers of light at the end of a very dark tunnel . . . Let us not forget that real prosperity for agriculture will come not from producing for government stocks, but only from expanding markets. Lower loan rates and the cheaper dollar are a beginning toward expanding markets and prosperity for American agriculture.

". . . But if agriculture is to prosper again, debt in the sector must be reduced, not increased; asset values must adjust to prospective commodity market conditions, not be artificially inflated with easy credit, or risk transfers from the public, or tax subsidies. Some resources—land, capital, and labor—must leave, not stay in agriculture. . . . Further, bold action by the U.S. agricultural community in . . . aiding agriculture in less developed countries also can mean major strides toward returned prosperity . . . The less developed countries are tomorrow's customers for U.S. farm products, if their incomes can be increased." *Robert L. Thompson, Assistant Secretary for Economics, USDA.*

"IN THE YEAR AHEAD, total cash receipts are expected to decline slightly—up to 4%—with crops accounting for all of the decline. Livestock receipts may rise slightly as small gains in poultry and dairy receipts, due to increased volume of marketings, will combine with higher hog prices and receipts. Cattle receipts in 1986 are anticipated to remain near those of 1985 as sharply lower production is offset by stronger cattle prices.

". . . It may be some time before agriculture again experiences significant price and income increases. However, as the adjustment process now underway runs its course, returns on new investment in farming will again become competitive." *John E. Lee, Administrator, Economic Research Service, USDA.*

"COMBINED GLOBAL TRADE in wheat, coarse grains, and soybeans is expected to be down about 10% in 1985/86. With further U.S. share losses because of increased competition from other countries, U.S. exports will fall even more. U.S. wheat exports are expected to be down more than 15%.

". . . The global agricultural outlook over the next several years is for continued gains in productivity, rises in product consumption, and a recovery in trade levels. The magnitude of increases in global agricultural trade will depend to a marked extent on import needs of the Soviet Union and China." *James R. Donald, Chairperson, World Agricultural Outlook Board, USDA.*

"THE SHARP RISE IN WHEAT YIELDS during the past 5 years seems to be marking a new era in yield advances . . . we may see U.S. national wheat yields averaging 45 bushels per acre by 1990 and possibly approaching 55 bushels per acre by the year 2000. Given this outcome, the critical question becomes: Can demand be increased sufficiently to offset the increased production potential? Or, even with maximum increases in demand, will an excessive production capacity still exist? The latter appears to be the case." *Frank Gomme, Foreign Agricultural Service, USDA."*

"TO BE (THE) PREFERRED SUPPLIER, the United States must beat other exporters to the business. Since 1980, we have not done well in that competition . . . We have the economic edge, if our price support policies will allow it to work . . . We have idle land and idle handling capacity that we can bring on stream at low cost. Our competitors are producing and exporting at capacity. They must make further capital investments if they wish to expand. We can slow down—and, in some cases, stop—competitive expansion by exposing them to the threat of strong U.S. competition at levels that do not justify investments in expansion.

". . . But, even if economics are on our side, will trade policies—here and abroad—permit a freer flow of goods? The drive for freer trade currently seems hemmed in on all sides . . . U.S. grain agriculture is rightly concerned about this situation. It understands that trade must be a two-way street. We cannot sell more, especially to developing country markets, while throwing up barriers to their exports to us." *Robbin S. Johnson, Vice President, Public Affairs, Cargill, Inc.*

"IN ANALYZING the financial situation at the Farm Bureau, we see continued adjustment of the farm operator debt load to levels that can be serviced from farm earnings. We see debt coming down to match earnings and not earnings going up to meet debt service . . . From the farmer's perspective, the financial situation boils down to a question of whether the reduction in debt will be 'paid for' through farm operators leaving farming and the assets repurchased at lower prices by other producers, or through debt restructuring for present farmers. . . .

". . . If all the farmers associated with the lender losses I discussed earlier are forced out of business, about 90,000 commercial farmers would exit farming over 3 years starting with 1985. This is about 15% of the commercial farmers . . . The discussion over the next year will be focused on how to keep some of these 90,000, probably about half of them, in business, while reducing their debt loads to manageable levels." *John K. Hosemann, Senior Economist, American Farm Bureau Federation.*

"AT THE RISK of sounding simplistic, I want to preface everything with the basic premise that only a profitable agriculture will be a bankable agriculture over the long run . . . (Agriculture) is undergoing fundamental structural changes that are resulting in a truly excessive level of insolvencies. As a result, short-term bank-aid approaches will do more harm than good. *Michael E. Fitch, Chairman, Executive Committee, American Bankers Association.*

"THE DEPRESSED farm economy has already taken its toll on many of the banks serving agriculturally dependent counties. Of the 89 commercial banks that failed prior to October 11, 1985, 26 were headquartered in agricultural counties. This amounts to an annual failure rate of nearly 1.5%—more than twice the failure rate for banks headquartered elsewhere.

". . . As banks adjust their lending decisions to deal with weaknesses identified by bank regulators, 'marginally qualified' borrowers are likely to be denied credit. This may force some farmers into bankruptcy, but it will also reduce credit availability for nonfarm rural businesses, putting rural communities in agricultural areas . . . at a comparative disadvantage in attracting new businesses and holding existing firms. Depending upon the size and structure of the local banking system, this could dampen the growth potential of the local nonfarm economy at a time when off-farm employment may be critical to the ultimate survival of the family-sized farm and to the economic well-being of people displaced from agriculture." *Patrick J. Sullivan, Economic Research Service, USDA.*

"THE DECLINE in the number of farmers has been an important trend throughout most of the history of U.S. agriculture. What is different about today's displacement . . . is the changed characteristics and economic position of the farmers who are leaving agriculture . . . Today, displacement is occurring among the larger and more efficient farm operators who made investment decisions based on the favorable economic environment of the 1970's. . . .

". . . Historically, the continual movement of large numbers of workers out of farming has been made possible by the growth and attractiveness of nonfarm job opportunities. But overall economic growth during the early 1980's has been extremely weak in today's most farm-dependent states and regions. This is especially true, for example, in the farm-dependent counties of the Corn Belt, where overall employment has continued to decline since 1979." *Fred K. Hines, Economic Research Service, USDA.*

"FARM FAMILIES that are forced to seek other employment are likely to experience adjustment problems similar to those encountered by workers displaced by manufacturing plant and mine closings. While some . . . are already working off the farm, others may have little or no experience in off-farm employment. Further, displaced farm operators may be seeking alternative employment at a time when few new jobs are available in their local areas. Farm families may then be forced to relocate to larger urban areas . . . in search of employment, perhaps only to find that their skills are not highly marketable in urban labor markets. For those farm families, grants, loans, and other programs to cover some of the costs of training, job search, and relocation could be very helpful." *F. Larry Leistritz, professor, North Dakota State University.*

Vietnam's Search for Recovery

After 10 years of unification, the Socialist Republic of Vietnam is still a nation searching for recovery, according to USDA economist Leslie Ross of the Economic Research Service.

And, says Ross, heavy foreign debt, lack of investment capital, raw material shortages, and Vietnam's continuing occupation of Cambodia are making progress toward this goal harder to achieve.

"Vietnam has been slow to recover economically from the effects of the war, which ended with the U.S. withdrawal in 1975," notes Ross. "There has been some progress in increasing rice production and replanting rubber, but the rebuilding of basic industries has been an uphill fight."

Complicating that problem, says Ross, has been the slow process of integrating the nation's two diverse economic regions: the agrarian, market-oriented South and the more industrialized, socialistic North.

Significant differences between the regions persist, despite the reorganization of the South when North Vietnamese forces took control. Private ownership of all farms and businesses was abolished, and officials and technocrats from Hanoi assumed most of the political and economic leadership positions.

All key decisions regarding the economy are now made by the central government and implemented through policies based on 5-year plans.

From 1976 to 1981, the results were anything but positive. Population growth outpaced the economy's annual growth rate of only 2 percent. In 1981, however, some price and profit incentives were introduced that reversed the declines in per capita income. From 1982 to 1984, the country registered economic growth rates of 5 to 8 percent a year, Ross reports.

As encouraging as that may seem, Ross suggests that Vietnam still has a long way to go.

Heavy Reliance on Imports

Hampering Vietnam's agricultural and industrial growth is a continuing dependence on imports, a slowdown in export growth, and low foreign exchange reserves.

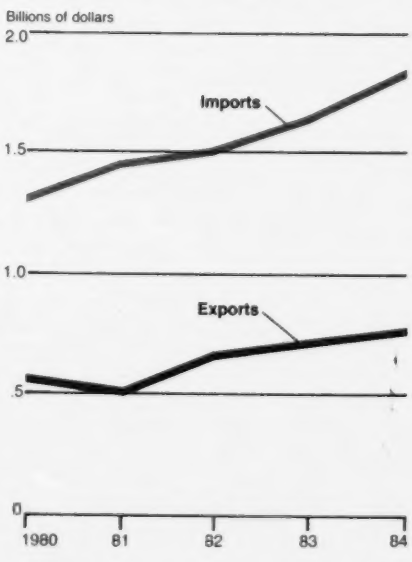
Hampering Vietnam's agricultural and industrial growth is a continuing dependence on imports.

The Soviet Union and other Eastern European nations are Vietnam's main trading partners. However, Ross points out that those trade ties do not earn Vietnam the dollars it needs to finance the imports of equipment, machinery, and technical expertise required to revitalize the economy.

"Even though Vietnam will receive about $2 billion worth of Soviet aid this year, the aid will not offset Vietnam's deteriorating financial position," says Ross. "Export volume rose 29 percent in 1982, but only 9 percent in 1984."

Ross also notes that political actions, including the Vietnamese occupation of Cambodia, have resulted in the cancellation of foreign aid from China and Western Europe. Despite a population of around 60 million, Vietnam maintains the world's fourth largest army.

Vietnam's Exports Are Growing, But Imports Are Climbing at a Faster Rate



Source: International Monetary Fund.

"Vietnam has been mired in debt since the mid-1970's when the country borrowed heavily to pay for reconstruction and food and oil imports," explains Ross.

Yet the problem of rebuilding a war-torn industrial base remains, and the situation is compounded not only by the lack of dollars, but also by inadequate transportation facilities, fuel shortages, and a scarcity of skilled managers.

Some industries were damaged by military actions during the war, and others were neglected. Many businesses in the South were virtually abandoned when the economy was transformed along socialist lines, and owners and managers were sent to resettlement or re-education camps.

In addition, hundreds of thousands of people, including many teachers, merchants, and technicians, have fled Vietnam since 1975.

While light industrial production of textiles and handicrafts has increased 80 percent since 1980, Vietnam's steel, cement, and fertilizer production is still 50 percent below pre-war levels.

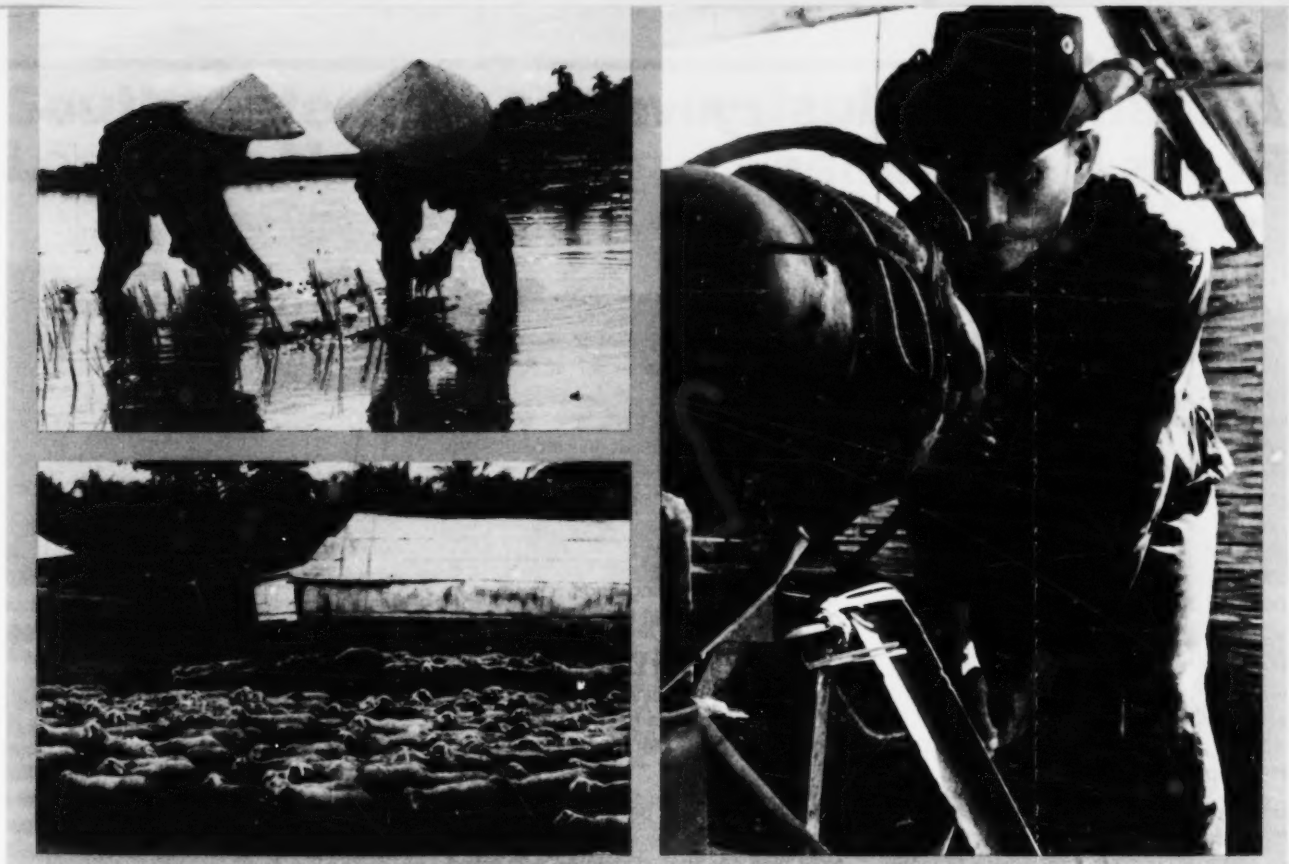
It may well be that efforts to revitalize and expand the industrial base will depend, to a significant extent, on Vietnam's largest production sector—agriculture.

Agriculture's Important Role

Vietnam remains a largely agrarian country. Roughly 70 percent of the population earns a living from farming or the marketing of farm products. More than 40 percent of the national income is based on the sale of agricultural products.

And agriculture has, in fact, been Vietnam's lone economic bright spot in recent years. From 1976 to 1984, food grain production increased at an annual rate of 8 percent.

According to International Monetary Fund figures, the Vietnamese produced an estimated 17.9 million metric tons of food crops



Vietnam remains an agrarian nation. Roughly 70% of the population earns a living from farming or marketing farm products. Most "industrial" production is very backward by U.S. standards.

in 1984/85, including 15.6 million metric tons of rice.

The farm sector is Vietnam's major export earner and a primary supplier of its processing sector. Other than rice, the nation's major crops include corn, groundnuts, tea, rubber, coffee, and sugar. Agricultural productivity, says Ross, is essential in getting the country back on its feet financially.

"Vietnam is looking to expand its exports of commercial crops such as tea, rubber, tobacco, and jute," she says. "By expanding agricultural exports to countries that pay in dollars, francs, or other widely accepted currencies, the Vietnamese are hoping to raise more money for imports and investment capital."

Thus far, notes Ross, rice and seafood products have been the most important currency earners. Other crops are largely earmarked for trade with the Soviet Union and Eastern Europe.

Although still a net importer of rice, Vietnam exported 150,000 metric tons in 1984/85. About 80 percent of the nation's farmland is reserved for rice cultivation. The majority of rice is grown along the Mekong River delta in the South, and a secondary tract along the Red River in the North.

To encourage more rice production, the central government adopted a policy in 1981 of letting farmers sell excess agricultural products on the open market after government quotas are met. The result has been increased rice production and tax revenue. Since 1981, rice production has increased by 4 million metric tons annually.

However, inflation has accompanied the rise in rural incomes. In 1984, the annual inflation rate stood at 50 percent as demand for scarce consumer goods far exceeded the supply.

Still, notes Ross, the international sale of cash crops and light industrial goods is one solution Vietnam is counting on to help cure the country's economic malaise.

But the challenge is great. Farming is still largely unmechanized, better water control is needed, and an acute fertilizer shortage threatens productivity gains.

Future Trade Essential

If future progress is to be made, says Ross, it will depend on expanding foreign markets. To accomplish this goal, product quality must be improved.

Also, according to the economist, a streamlined bureaucracy and better economic planning are needed if the country wants to improve productivity.

In the future, she says, some decentralization of government authority may take place. In the area of the economy, consumer subsidies are being reduced. Consumer subsidies are the largest single government expenditure, amounting to 7 percent of the 1984 total gross domestic product.

"In the last 10 years, Vietnam has started the process of rebuilding the economy and has had modest success," says Ross. "But more foreign trade, technical assistance, and economic reform are needed if that growth is to continue." □

[Based on information supplied by economist Leslie Ross of the International Economics Division, Economic Research Service.]

A Lean Hog Industry Faces Lean Times

Efficiency. Hog producers didn't invent it, but they've certainly made it a part of their industry over the last three decades. You could say that the hog industry has become lean, and it's continuing to streamline, according to former USDA economist Roy Van Arsdall, now retired from the Economic Research Service. This, Van Arsdall says, has made producing hogs in the United States one of the most efficient of all agricultural pursuits.

The key to efficiency, he says, at least in the production of hogs, is size. Larger operations have a distinct advantage. Consequently, that's been the trend. But, along with larger, there's also been a trend toward fewer operations.

Between 1950 and 1980, Van Arsdall says, the number of U.S. hog farmers dropped by nearly 80 percent from a peak of more than 2 million.

At the same time, the average annual sales per farm rose from 31 hogs to nearly 300. And, instead of an equal distribution of sales from every size of farm, the largest farms now account for most of production. An example: In 1980, operations that sold 1,000 or more hogs a year accounted for only 3 percent of the total number of U.S. hog farms, but they produced 40 percent of the hogs marketed. In 1964, by contrast, only 7 percent of total hog marketings came from such large operations.

Despite the fact that substantially fewer farmers are producing hogs now than in 1950, output is about the same.

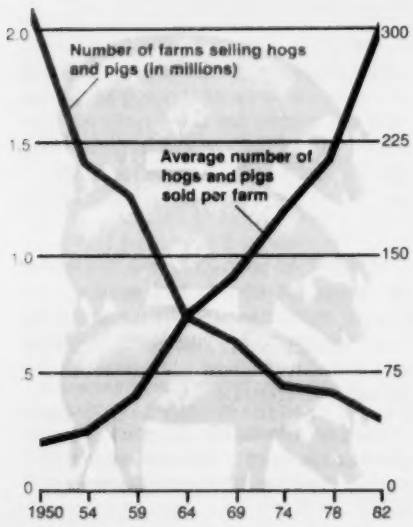
The Advantages of Larger Operations

One reason, according to Van Arsdall, is that large operations have substantial advantages over smaller operations. Among them:

- More production per sow. The largest operations studied were able to wean nearly eight pigs per litter, compared with seven or fewer for the smallest operations.
- Greater use of facilities. Large operations produce hogs intensively year-round. Their production per unit of housing, which accounts for most of the investment required in hog production, is up to six times greater than on farms with the smallest enterprises.
- Less labor and lower utility costs. Large operations use only about a fourth the labor and far less power per unit of production.
- Lower feed costs. Although large producers have always had a slight advantage over smaller ones in feed costs, their advantage increased along with their size. Bulk purchases and wholesale prices give larger producers the edge.
- More effective marketing. Large producers sell more of their feeder pigs directly to finishers and more of their slaughter hogs directly to packers, avoiding many of the marketing costs borne by small producers who, more frequently, deal with a middleman. □

[Based on information provided by economist Roy Van Arsdall, now retired from the National Economics Division, Economic Research Service.]

The Hog Farm Sector Moves Toward Fewer and Larger Operations



In a Slump

Despite such efficiencies and restructuring moves, what has been called the pork industry's worst slump in recent memory continues. And, according to USDA livestock analyst Ron Gustafson, also of the Economic Research Service, the gloom may not lift until the end of this year.

In 1985, the hog and pig inventory fell to the lowest December 1st level since 1975, and breeding herd numbers were the lowest since economists began collecting the data in 1964. Moreover, farmers' summer-fall farrowing intentions were down, meaning that pork output through at least the spring will be below what economists view as "normal levels."

Why the continued slump in hog marketings? After all, feed costs are low and there's been little price inflation in the other supplies it takes to run a hog operation.

But such easing on the cost side still did not let producers escape from below-breakeven returns during the first three quarters of 1985. According to Gustafson, depressed hog prices get the blame.

For sure, losses on the hog operation itself are reason enough for postponing any herd rebuilding. Another important thing to remember is that hogs are a liquid asset. If pressed for cash, you can take a few to market.

And it is no secret that farmers in the Midwest, where most hog production is centered, have been among the most severely strapped financially. Their land values have fallen the most in the past year or so, and prices of other farm products they sell, notably grains, have worsened too.

Southeastern Trend Favors Less Till, No-Till

Profits are probably the motive for this no-till system in which soybeans grow in the residue of the previous season's corn harvest.

In the southeastern United States, farmers are rapidly adopting conservation tillage practices, according to USDA economist Lee Christensen of the Economic Research Service.

"The conventional methods of repeatedly tilling the soil by plowing, disking, harrowing, or cultivating have been greatly reduced in favor of minimizing soil disturbance and leaving plant residues on the field surface," Christensen says. The major reasons: the control of soil and water erosion and higher profits.

Between 1973 and 1984, farmers in the Southeast increased the amount of acreage in minimum tillage by 275 percent, according to Christensen. At the same time, acreage in no-till jumped by 290 percent in the region, which includes all the southeastern states as far west as Louisiana and as far north as Virginia.

While the Southeast does not exactly mirror the trends in the nation, it does come close. Comparable increases nationwide amounted to 220 percent for minimum-tillage and 300 percent for no-till. Christensen notes that adoption rates are highest in the Corn Belt because conservation tillage methods are most developed for row crops such as corn, soybeans, and small grains, which are the predominant crops in that region.

Profits Are an Incentive

Wherever conservation tillage is used, however, profitability is a major impetus, according to Christensen. Profits are influenced by many factors including yields and major input requirements such as labor, management, pesticides, and fuel.

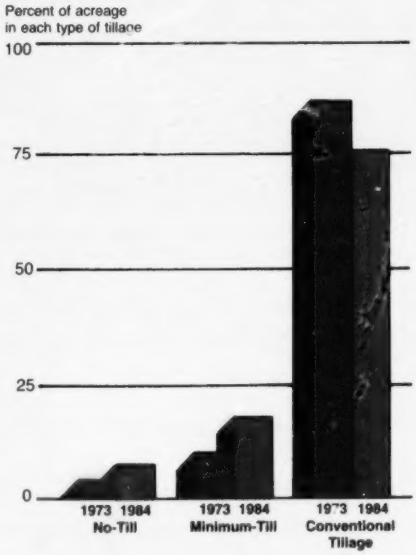
According to Christensen, farmers must take a look at the impact of conservation tillage on net revenues rather than on total or gross revenues. "Even if a particular conservation system results in lower yields, profits could remain the same because of reduced input costs," he says.

Using conservation tillage, he says, yields can be higher or lower depending on the crop and specific location. In general, conservation tillage systems perform best in areas with long growing seasons, but the suitability of the soil is also a critical factor, Christensen says.

One long-term experiment conducted in Tennessee compared the average yields for soybeans grown using conservation tillage methods with soybeans grown under traditional tillage methods. The results: an average 32 bushels an acre with conservation tillage and 36 bushels an acre without.

Labor and management costs are generally less, Christensen says, because there are fewer operations and fewer trips across the field. The most significant economic savings, however, is a lower fuel requirement. Although fuel needs can vary greatly, Christensen says, reduced tillage systems require an average 3 to 5 gallons less per acre than conventional tillage systems.

Acreage in the Southeast Is Shifting to No-Till and Minimum-Till from Conventional Methods of Tillage



Chemical Costs Can Increase

What can increase, though, is the need for more chemical controls to combat the weeds and insects that can thrive when tillage is reduced. Estimates of chemical requirements with different tillage systems varied greatly depending on the crops, soils, and management systems. A recent survey found that increases in pesticide use ranged from 14-43 percent when farmers used conservation tillage methods.

However, while higher pesticide and herbicide costs are a generally accepted part of conservation tillage, he adds, they are not inevitable. New application methods are being developed to reduce the quantities of chemicals needed on some crops, Christensen says. And farmers can also employ specialized management techniques such as using better equipment or crop monitoring programs. □

[Based on information provided by economist Lee Christensen of the Natural Resource Economics Division, Economic Research Service.]

Charting U.S. Agriculture

Agricultural and economic information comes alive in USDA's *1985 Agricultural Chartbook.*

Its 278 charts make it a valuable reference work, a popular teaching tool, and a convenient source of visual aids to dress up speeches and reports. Coverage is as broad as agriculture itself, and each chart is designed to make its point simply, quickly, and without distortion.

Users of the chartbook will find detailed graphs showing historical trends and current developments in agricultural trade and world production, farm income and farm debt, food prices and consumption, rural population and employment, costs of living and costs of farming, land uses and land values, and many related subjects.

Individual commodity sections provide charts on supply, demand, and price trends for beef, pork, dairy products, poultry, grains, oilseeds, cotton, fruits and vegetables, and other farm products.

1985 Agricultural Chartbook. *(Published December 1985; 96 pages, mostly charts; GPO Stock No. 001-019-00428-2; $3.50.)*

Matching Costs Against Returns

Average cash costs of producing major U.S. crops increased about 5.7 percent per acre in 1984, mainly because of higher prices for seed, fertilizer, and machinery. Livestock production costs fell an average of 1 percent in 1984, and dairy costs rose 3.2 percent.

Cash receipts, meanwhile, were lower for most crops, but higher for livestock and dairy. When cash expenses and capital replacement costs are subtracted from cash receipts, "residual receipts" fell from 1983's levels for the majority of crop commodities and were negative for both cattle and hogs.

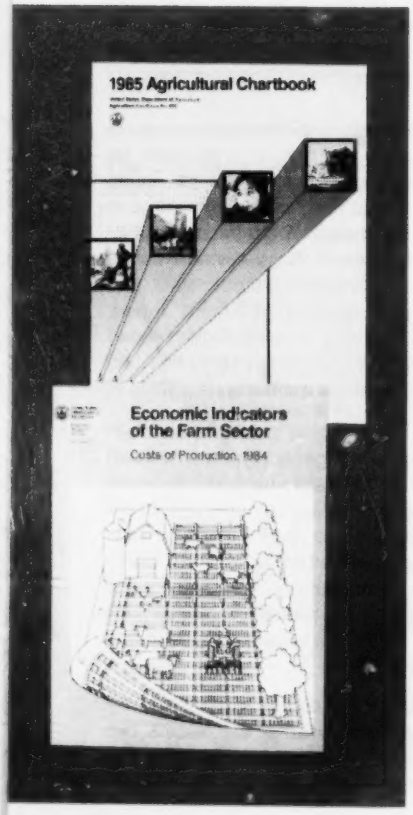
In the crops sector, farmers' residual receipts per acre were up slightly for corn and up significantly for oats and peanuts. Residual receipts fell for sorghum, barley, wheat, rice, soybeans, sunflower, cotton, sugar beets, and sugarcane. For three of these crops—sorghum, barley, and sunflower—U.S. average residual receipts were negative.

In the livestock sector, residual receipts remained negative in 1984 for fed cattle and cow-calf operations. On average, neither could cover cash costs of production. Residual receipts for fed beef, however, did improve from −$7.51 per cwt in 1983 to −$3.43 in 1984 because cash receipts increased to their highest level since 1980.

Negative residual receipts per cwt were also recorded for feeder pigs and farrow-to-finish hogs. Residual receipts were positive for both sheep and milk, but were up for sheep and down slightly for milk.

This statistical report, part of an annual series focusing on economic indicators in farming, provides detailed estimates of costs of production, cash receipts, and residual returns for 1982 through 1984. It covers the following commodities: corn, sorghum, barley, oats, wheat, rice, soybeans, sunflower, peanuts, flax, cotton, sugar beets, sugarcane, fed cattle, cow-calf operations, feeder pigs, farrow-to-finish hogs, sheep, and milk. Data are provided for different production regions and for different size livestock operations.

Economic Indicators of the Farm Sector: Costs of Production, 1984 *coordinated by Bob McElroy, Ken Baum, and Jim Johnson. (Published September 1985; 151 pages, mostly data tables; GPO Stock No. 001-019-72072-7; $5.50.)*



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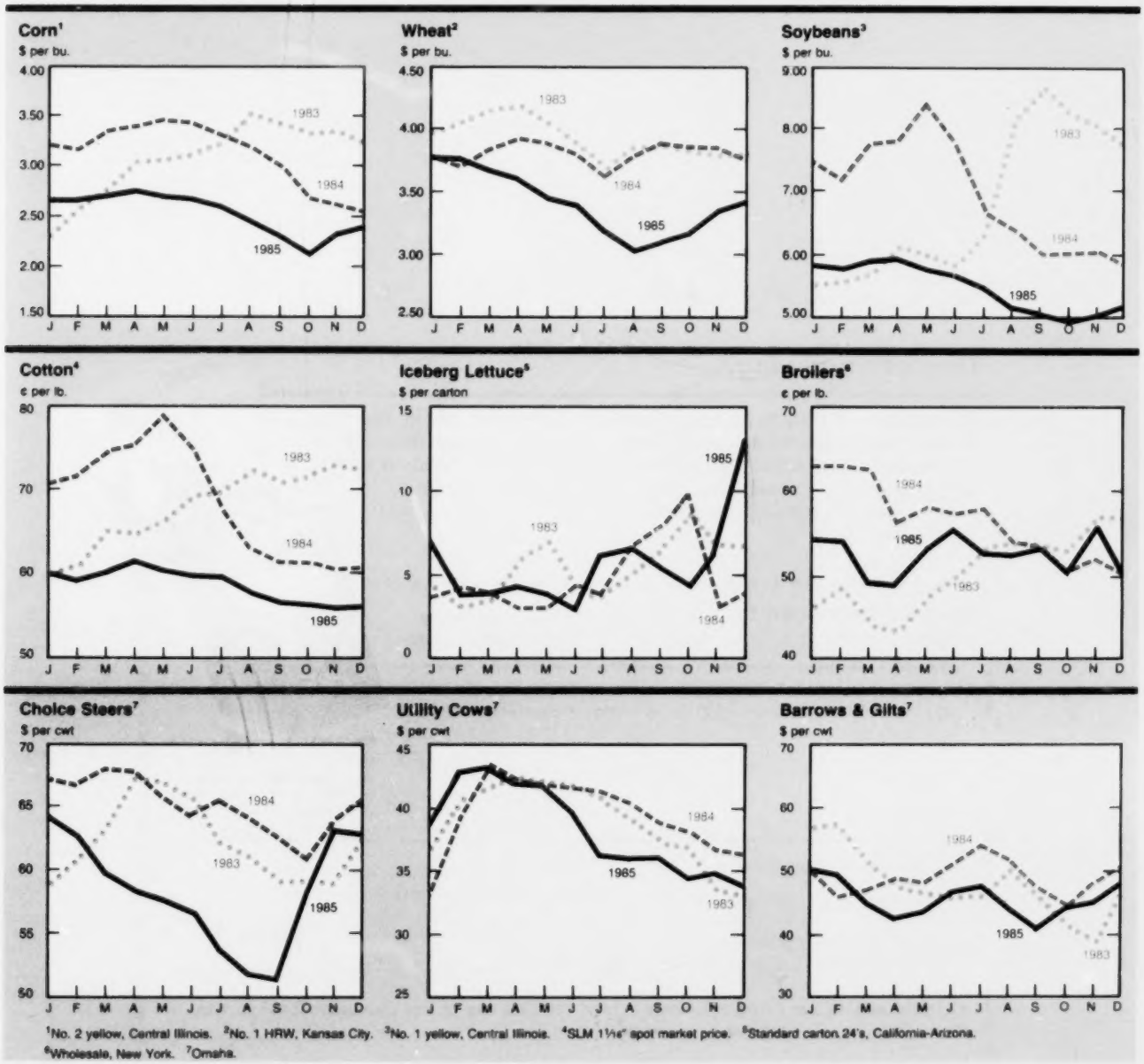
FARMLINE TRENDS

Monthly Price Monitor

USDA's index of farm prices rose nearly 1% in December but was 5.2% below its year-earlier level. Although 1985 ended with corn, wheat, and soybeans moving upward, these were the lowest December prices in 3 (or more) years. At $2.38 per bushel, corn was 18¢ below its Dec. 1984 price, wheat was down 34¢, and soybeans—at $5.14—were off 74¢. Other end-of-year comparisons showed cotton down 4.2¢ a pound to 56.3¢, while iceberg lettuce was up $9 per carton.

Choice steers sold for $62.94 per cwt in Dec. 1985, down from $65.31 in Dec. 1984. For hogs, Dec. 1985's price of $48.02 was the highest in 10 months, but it was still almost $3 below the Dec. 1984 level.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1⅛" spot market price. [5]Standard carton 24's, California-Arizona. [6]Wholesale, New York. [7]Omaha.

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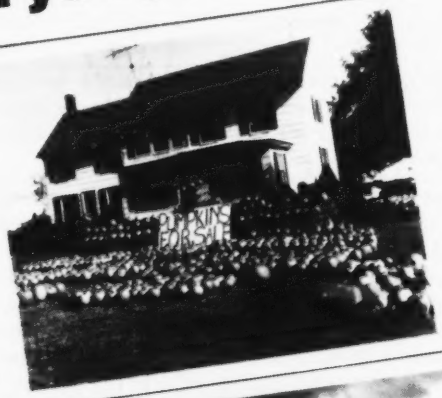
United States Department of Agriculture

Economic Research Service

Volume VII
Number 3
March 1986

Can you pick out the "real" farm?



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Exporting to Egypt
page 10

A 13.35:Ag

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PERSPECTIVES

AMERICANS SMOKED AN ESTIMATED 594 BILLION CIGARETTES last year. This was about 1% fewer cigarettes than the previous year and a 7% drop from the record number smoked in 1981.

Average per capita consumption declined to 3,378 cigarettes, down 2% from 1984 and the smallest number since 1944. The figure is calculated by dividing the total number of cigarettes smoked by the 18-and-over population.

The outlook for 1986 and 1987, according to USDA economist Verner Grise: Overall use and per capita consumption will fall again. Grise cites a variety of reasons, including increases in state excise taxes, further increases in retail prices, heightened antismoking activity, and additional restrictions on where people can smoke.

Tax increases have raised cigarette prices significantly during the last few years. The federal excise tax was raised to 16¢ on January 1, 1983, doubling the 8¢ per-pack tax levied back in 1951. The increase, which was to have been temporary, is now expected to become permanent, Grise says. State excise taxes have also gone up in 30 states since 1983, with average increases of 5¢ a pack. State tax levies now vary widely — from 2¢ a pack in North Carolina to 28¢ in Maine. In some areas, consumers face additional city-imposed taxes. The combined city and state taxes in New York City add 29¢ to the price of a pack of cigarettes. In Chicago, the city and state tack-on is 43¢. And, Grise says, state and city tax increases are likely this year.

Wholesale cigarette prices rose in December after an increase just 6 months earlier in June. The December increase marked the tenth hike since August 1982. Grise cites increased manufacturer costs and the doubled federal excise tax. Retail cigarette prices jumped 43% from August 1982 to December 1985, but the rate of increase slowed down during the last 2 years. Prices rose 6% in 1985 and are likely to be up 6% to 8% this year. The slower rate of increase, together with the switch by some smokers to lower priced generic cigarettes, could cushion the decline in cigarette use.

Antismoking activity, including legislation, continues to affect the industry. More than four-fifths of the states now have laws that either prohibit smoking in certain places or segregate smokers and nonsmokers, particularly in restaurants. Workplace smoking regulations are in effect in ten states, and a large number of towns and cities have smoking restrictions. The industry also faces other legal challenges, Grise says. Even though rulings in two recent product-liability suits were favorable to tobacco manufacturers, a number of additional suits are pending. Although the impacts are difficult to measure, the legal restrictions and antismoking publicity campaigns almost surely account for some of the downward trend in per capita consumption, he adds.

The increased prominence of health warnings on cigarette packages and advertising adds another uncertainty. As a result of changes in the Federal Cigarette Labeling and Advertising Act last October, there are now four separate health warnings which are rotated at 3-month intervals for each brand of cigarettes. The same system applies to advertising. The warnings on cigarette packages are about twice as large as the original ones, which were instituted in 1971.

FARMLINE

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FEATURES

What (Exactly) Is a Farm? *by Doug Martinez* 4

The answer to the quiz on the cover is "All of the above." And that may be a problem. Economist David Harrington says a too-inclusive definition can distort perceptions of farm conditions and mislead those who make farm policy.

Exporting to Egypt *by Doug Martinez* 10

The United States is the leading supplier of Egypt's growing $4-billion market for food imports, but the U.S. share has been slipping. How America fares in the face of ever-tougher competition will depend, says one expert, on the credit and export incentive programs we are willing to offer.

Improving China's Livestock Industry *by Ellen Banker* 12

China's goal of putting more meat in the diet may help beef up future Sino-American agricultural trade. China is already importing top-quality pigs, chickens, and dairy cattle to improve its native stock, and modernization of its livestock industry will probably require imported feed processing equipment and a return to the world feed grain market.

DEPARTMENTS

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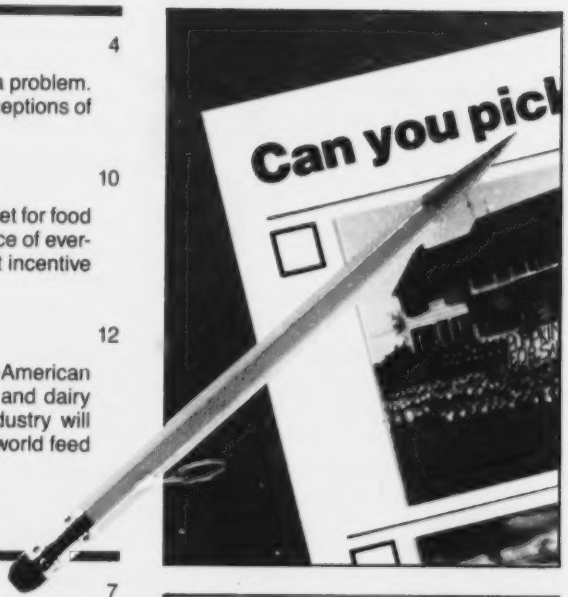
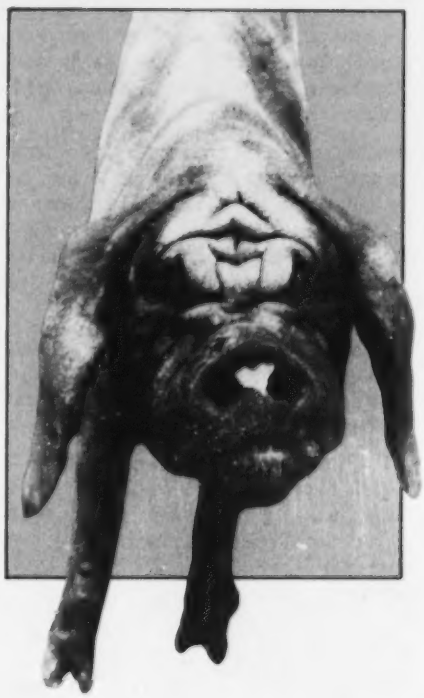
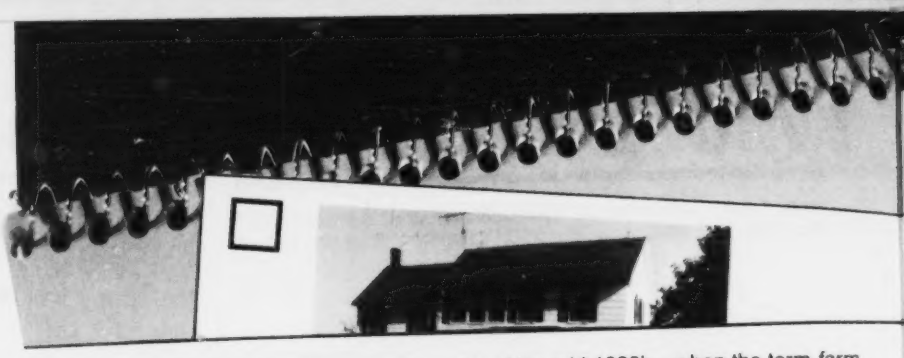
Tear out and save this handy telephone guide to Economic Research Service and Statistical Reporting Service specialists who can help with your questions on crop and livestock developments, trade, farm finances, and other agricultural topics.





What (Exactly) Is a Farm?



Stretched to cover everything from a small, backyard apple grove to a 3,000-cow dairy operation, the word *farm* has lost the sharp snap of precision.

"It means everything in general and nothing in particular," says economist Dave Harrington, a farm analyst with USDA's Economic Research Service.

The major reason, according to Harrington, is that the definition hasn't changed nearly as much as farming itself.

In the official count, any operation that produces and sells just $1,000 worth of agricultural products a year qualifies as a farm. Even at today's prices, that may mean no more than a few beef animals, an acre of sweet corn, or a dozen fruit trees and a roadside stand.

It can mean that people who spend 40 hours a week in an office or factory and devote some spare time to raising crops or animals on a few rural acres are lumped together with full-time family farmers who depend on agriculture for their livelihood. The family-size farms, in turn, are lumped together with the "super farms" grossing $1 million or more a year.

Harrington and his colleagues do not want to sit in judgment of who can claim the title of "farmer," nor is their interest simply one of semantics. They point out that when the government chooses to use a particular definition for statistical purposes, the choice has important implications.

These implications, they add, deserve the attention of those who must analyze farm structure, financial conditions, and farm policy.

"Too broad a definition begets a blurred vision that can distort perceptions of farming's financial status, its size, and its place in American society. And it can conceal significant distinctions among different types of farms," Harrington says.

The definition of a farm was last changed in 1974, and before that in 1959. Neither change was very significant, even though the structure of American farming was undergoing a dramatic transformation.

Many economists now support the idea of using commercial farms when talking about problems related to agricultural production and export markets.

Revolution in Farm Structure

Certainly, the word *farm* once represented the reality of numerous, small, mixed-enterprise operations that comprised American agriculture. The similarity in farm size and structure throughout the nation meant that a simple, virtually all-inclusive definition was usually correct.

That is no longer true—and a lot has happened to make such a definition less meaningful, and perhaps even misleading.

"There's a greater diversity in farm size, greater specialization in farm production, and greater concentration of production among the larger-sized commercial farms," says Harrington. "Today, about 30 percent of the farms produce nearly 90 percent of the nation's crops and livestock."

One other change from the agricultural sector of the mid-1930's—when the term *farm* could last be broadly and accurately applied—is the fact that farm numbers have fallen by nearly two-thirds.

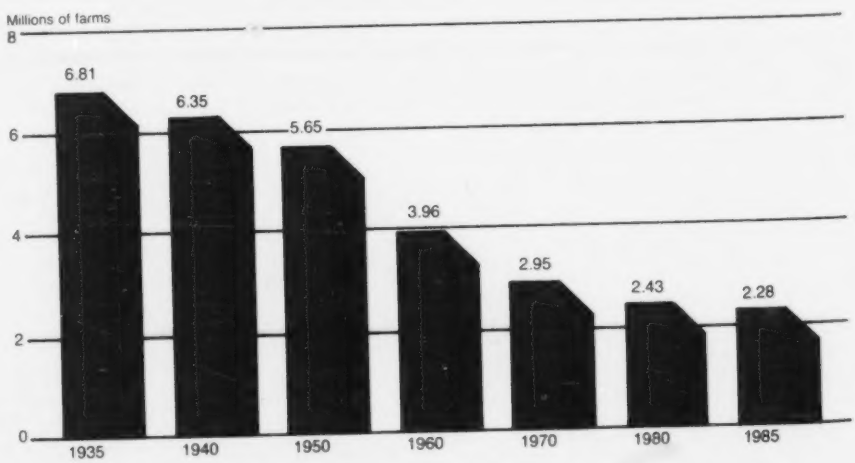
All these changes have made American farming a model of efficiency and productivity—but they have also created a potential problem.

"The problem occurs when today's widely diverse farm sizes are blended into an 'average' farm," says Harrington.

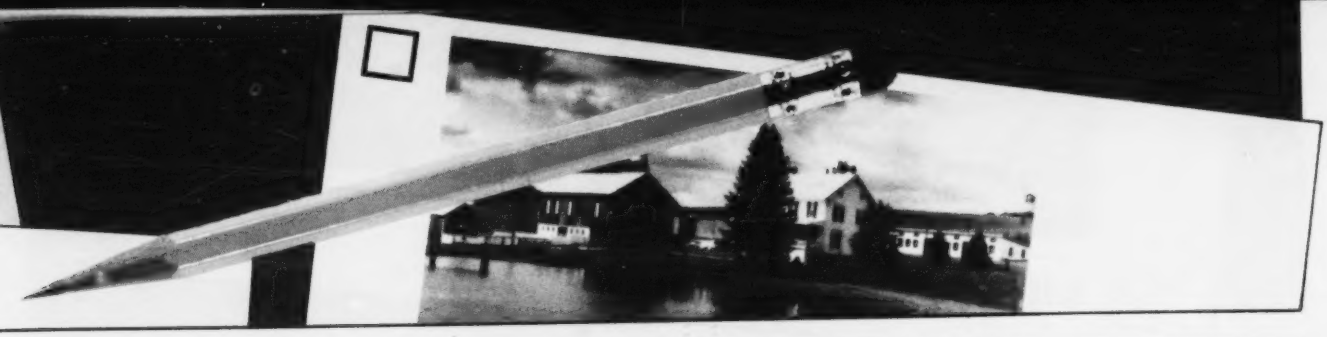
For example, when the many, very small units are counted among the nation's farms in the government statistics, their incomes, assets, and debts are often averaged with the financial data of other farms. As a result, their strengths or weaknesses sometimes become part of the statistical profile shaping perceptions of conditions in the farm sector. In policy discussions, their needs can get intertangled with the sharply different needs of those who farm for a living and provide the bulk of the nation's food supply.

Recognizing the misleading picture that can result from data on all farms, USDA economists tend to depend less on aggregate farm data and more on data that is

By 1985, Farm Numbers Had Dropped to a Third of the 1935 Level*



*The definition of a farm changed in 1959 and 1974.



broken down by sales classes, commodities, and producing regions.

These analysts are also focusing more on commercial-size farms, particularly where interest centers on those farms that produce the nation's food and fiber and depend on income from agriculture.

According to Harrington, clearer definitions, and divisions, of farming allow analysts to make more accurate judgments about the state of American agriculture.

"Many now support the idea of using commercial farms (generally those with annual sales of $40,000 or more) when talking about problems related to agricultural production and export markets. It is these operators who provide nearly 90 percent of the nation's food and fiber," Harrington says.

"The economic situation of the smaller farms that make up almost three-fourths of the farm sector often depends more on the availability of off-farm job opportunities, which, in turn, are related to developments in the general economy," he says. "On the other hand, larger-sized commercial units which comprise only 30 percent of the sector are more dependent on farm income and cash flow, and more susceptible to weak export demand and changes in interest rates."

Decline in Farm Numbers

Another example of the problem of imprecise definition arises in discussions on the decline in farm numbers.

"It's sometimes viewed as a problem, but the trend may be very different depending on what is counted as a farm," he says. "The drop in farm numbers is confined largely to farms with sales of less than $40,000 a year."

Harrington suggests that farms can be divided, initially, into commercial and noncommercial categories.

These categories in turn can be further divided, he says. Noncommercial farms can be broken down into rural residences (less than $10,000 annual sales) and small family farms ($10,000 to $39,999 annual sales). The commercial farm category, which is elastic enough to encompass sev-

More Than Statistics

A statistical definition of farming may be important—but numbers alone don't begin to measure its meaning.

As a nation, we seem to have a fondness for farming, even in the words we use to describe the land and those who nurture it to nourish us.

America's "heartland" has always suggested something more than simple geography—soul and spirit, perhaps.

It has been a hearth, some say, in which the human spirit was warmed and the values and virtues of hard work and honesty were fostered. A special caring about family and the foundation of it all—the land—was there too.

Thus, working with the land and livestock has seemed like a special mission to many, particularly when such handiwork is rewarded by providing food for far more than the farm family.

Those who find their fulfillment in farming—and whose artistry in agriculture has proven the most productive in the world—are proud of their knack with nature.

Maybe it's not so hard to understand, then, why the suffering for some farmers who can't pay their debts and can't borrow any more goes beyond financial crisis or collapse.

For many of them, the emotional pain and bewilderment of losing a family farm means they have lost their way of life.

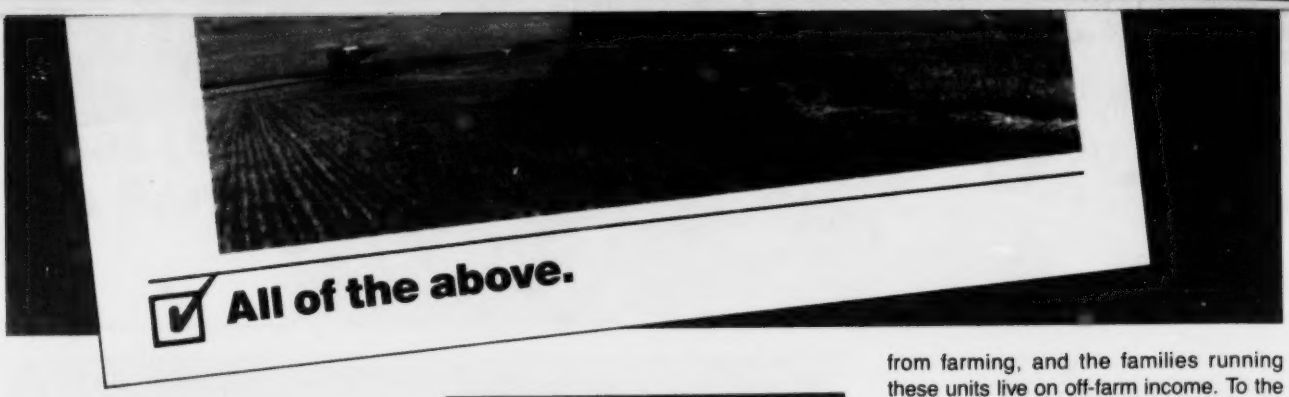
And it brings into sharp focus the debate over what a farm is: Is it simply a business like any other, responsible for producing the nation's food and fiber? Or is it something more, which government should take special steps to preserve?

Farmers whose families have been food providers for generations say something irreplaceable is being lost as more farmers leave the land for financial reasons.

There's a saying by American orator and statesman William Jennings Bryan that is enjoying new life amidst the heartache in America's heartland. It seems to sum up, if anything can, what many family farmers are feeling these days:

"Burn down your cities and leave our farms, and your cities will spring up as if by magic," said Bryan, speaking in 1896, "but destroy our farms, and the grass will grow in the streets of every city in the country."

Farming can't be measured by statistics alone. Farmers whose families have been food providers for generations say it's a way of life worth preserving.



☑ All of the above.

eral classes of farms, can also be split into at least two subgroups: family farms ($40,000 to $249,999 sales annually) and larger-than-single-family farms ($250,000 or more in annual sales).

"Roughly half the nation's farms are noncommercial, rural residences," says Harrington, "and roughly 5 percent are larger-than-single-family operations. The rural residence farms (those with less than $10,000 in annual sales) produce only about 3 percent of total output. The larger-than-single-family operations have increased their share from one-third to half of total U.S. output during the last two decades."

Small operations depend less on farm income for their livelihood.

"By 1982, operators in the rural residence and small family farm categories did not depend on farming as their primary source of income," says Harrington. "Family-sized farms now show greater dependence on net farm income than off-farm income. Larger-than-single-family farms realized large net farm incomes, but these were often split between several owners or operators."

Definitions Only a Beginning

Definitions are simply a starting point, however, for the work of developing policies that respond to the realities of today's agriculture. While a clear definition certainly doesn't guarantee good policy, Harrington says, an overly broad definition can add confusion to a policymaking process that requires full recognition of the diversity within the farm sector.

Definitions are simply the starting point for the work of developing relevant farm policies.

This diversity includes around 1.1 million "farms" with annual sales of less than $10,000 a year. Harrington classifies these as rural residences because, statistically, they are more residences than farms. On average, their off-farm incomes are around $20,000 a year, while their net farm incomes are negative.

"If the purpose of farm policy is to reach those who farm for a living or those who produce the bulk of the nation's food and fiber, the needs and aspirations of this group are probably outside the appropriate scope of farm policy," he says.

The same might be true of the small family farms—those with annual sales of $10,000 to $39,999 a year. As a group, they also show consistently negative net incomes from farming, and the families running these units live on off-farm income. To the extent that this nation might want to preserve these farms or reduce the incidence of poverty among them in certain parts of the country, the tools might include better job opportunities, job training, and social welfare programs rather than traditional farm programs.

"It is hard to see how either commodity policy or credit policy could raise income in the noncommercial sales classes sufficiently so that one could make a living from farming," says Harrington.

Even if noncommercial units were excluded from the farm definition, there would still be risks in lumping the family-sized farms and the larger farms together in policy deliberations. Harrington notes, for example, that farm programs designed to provide a more favorable price environment for the family-sized farms may actually encourage the growth of larger-than-family-size farms.

"The benefits of price support and related programs are proportional to sales of the supported commodities, so the benefits tend to be concentrated among the largest farms which make most of the sales," he says. "It is generally agreed that the limitations on direct government payments have not been very effective in limiting assistance to very large farms."

If the aim is to reduce production surpluses, then programs clearly have to appeal to the largest farms that produce the largest volumes. On the other hand, if the goal is to help the family-sized commercial farm, then the same programs may be counterproductive. In either case, defining the terms of the discussion is a vital first step.

As elementary as that sounds, analysts agree that some of the policy failures of the past can be blamed, at least in part, on a reluctance to recognize the diversity in farming and to clearly define who should, and who should not, receive the attention of farm policymakers. □

[Based largely on information provided by economist David Harrington of the Agriculture and Rural Economics Division, Economic Research Service.]

The Farm Count Is Stacked with Small Units That Earn Their Income Off the Farm and Contribute Only About 11% of Total Production

	Annual sales of agricultural products			
	Less than $10,000	$10,000-$39,999	$40,000-$249,999	$250,000 and up
Percent of farms	48%	22%	25%	5%
Percent of production	3%	8%	40%	49%
Average net farm income per farm	-$1,758	-$579	$16,251	$180,704
Average off-farm income per farm	$20,332	$19,344	$10,110	$12,352
Average assets per farm	$134,546	$273,738	$706,086	$2,339,741

All data from 1984.

REPORTS IN THE NEWS

Thirty-Five Years of Farm Values

he land and buildings of the aver-ge U.S. farm were worth about 13,700 in 1950. Average value per cre was $65. Both figures climbed teadily until reaching peak values f $352,000 per farm and $823 per cre in 1982.

ince then, real estate values have ropped sharply. In 1985, the aver-ge farm's land and buildings were orth $296,379, and the average alue per acre was $679. Farm uildings accounted for 13 percent f the total value of U.S. farm real state in 1985, down from 30 per-ent in 1950. Average farm size ore than doubled in the same eriod, from 213 to 437 acres.

arm real estate debt increased om $5.6 billion to more than $111 illion between 1950 and 1984. ecause debt rose much faster an real estate values, debt's role the farm real estate picture dou-led. In 1950, farmers owed only 7 ercent of the value of their real state to creditors. By 1984, the ational average was 14 percent, nd it was higher in some states.

Iowa, for example, debt's share f farm real estate values climbed om 7.7 percent in 1950 to 11.2 percent in 1981 and 17.7 percent in 1984. The average Iowa farm increased in value from $27,100 in 1950 to a high of $570,900 in 1981. From 1981 to 1985, however, average real estate value dropped 45 percent to $316,400.

This statistical bulletin—a valuable reference tool for anyone interested in farm real estate values—covers all states except Alaska and Hawaii. For each state, USDA's annual data on farm real estate values, number of farms, acreage in farms, farm real estate debt, and farm real estate taxes are presented for 1950 to 1985.

Farm Real Estate: Historical Series Data, 1950-85 *by John Jones and Charles Barnard. (Published December 1985; 51 pages of data tables; GPO Stock Number 001-019-00434-7; $2.00.)*

Who Works on Farm Labor Crews?

Most farmworkers are hired directly by farmers or farm managers, but others are hired by labor contractors who provide work crews to farmers.

Farm labor contractors must register with the U.S. Department of Labor before they can recruit farmworkers. According to a recent study of 1981 data (the latest available), most of the 9,774 farm labor contractors certified by the Labor Department resided in the Southeast and Southwest.

Roughly 250,000 farmworkers worked for farm labor contractors that year—10 percent of the nation's 2.5 million hired farmworkers. Twenty-eight percent of the farmworkers on crews reported that they spent most of their time working in grain production, 24 percent worked primarily in fruits and tree nuts, and 18 percent in vegetables and melons.

Nearly 40 percent of the workers were under age 17, and many of them worked only during school breaks or after school hours. Of those age 25 and over, however, 70 percent had completed no more than 8 years of school.

One out of five crew workers was paid on a piece-rate basis, but most were paid hourly wages. The average hourly wage was $3.58. About one-third of the workers came from families with incomes of $20,000 a year or more.

Those in higher income families were mostly short-term workers who put in fewer than 75 days in a crew. The short-term workers accounted for 79 percent of all crew workers.

In contrast to short-term workers, most long-term crew workers were members of minority groups (78 percent were Hispanic, black, or other minorities, compared with 39 percent of short-term workers), and they were more likely to work in the harvest of fruits and vegetables. Long-term workers averaged $5,776 in overall earnings in 1981—96 percent from farmwork.

Farm Labor Contracting in the United States, 1981 *by Susan Pollack. (Published November 1985; 13 pages of text, tables, and charts; GPO Stock Number 001-019-00426-6; $1.00.)*

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Dialing Up Economic Information

Need economic information or data on today's, tomorrow's, or even yesterday's agriculture? The economists, statisticians, and other specialists of the Economic Research Service and Statistical Reporting Service may be able to help. Here is a brief telephone guide that you can pull out and add to your files. Generally, those listed with an "S" for "Statistics" can give you acreage, yield, production, and stocks data. Those identified with an "E" for "Economics" can help with supply-demand-price questions and other economic relationships. All telephone numbers can be reached by dialing area code 202.

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Dan Buckner	S	447-4448
Clifford Carman	E	786-1830
Jerry Rector (World)	E	786-1691
Eggs		
Al Drain	S	447-6147
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Fruits and Nuts		
Doyle Johnson	S	447-5412
Ben Huang	E	786-1766
Hay		
Steve Kellog	S	447-7780
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Hogs		
Steve Wiyatt	S	447-3106
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Honey		
Fred Gray	E	786-1769
Peanuts		
Radley Edwards	S	447-5944
Duane Hacklander	E	786-1840
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Potatoes		
Arvin Budge	S	447-4285
Glenn Zepp	E	786-1768
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Poultry		
Paul Hurt	S	447-3237
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Cliff James	S	447-7960
Janet Livezey	E	786-1840
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Sheep		
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Luigi Angelo	E	786-1769
Tobacco		
Darwin Ransom	S	447-7621
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Wool		
John Cole	S	447-3578
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Linda Bailey (World)	E	786-1691

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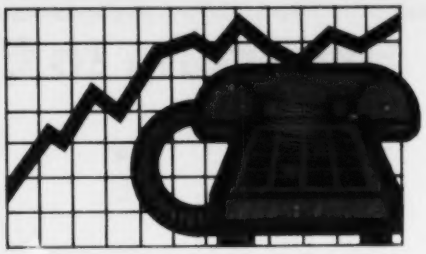

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Exporting to Egypt

The United States should continue to be the leading supplier of Egypt's growing $4-billion-plus market for food imports—as long as favorable trade terms are made available.

That's the view of economists George Gardner and John Parker of USDA's Economic Research Service. The two analysts recently examined Egypt's market potential for U.S. products.

"If the United States is to maintain or expand its share of this large and growing market, new financing arrangements will probably be necessary," say the two economists. "Egypt's foreign exchange position will probably not improve soon. Its major sources of foreign exchange revenue—money sent home by Egyptians working abroad, petroleum exports, Suez Canal tolls, and tourism—are all highly vulnerable to fluctuations in the world economy."

U.S. exports—largely wheat, corn, tallow, tobacco, and wheat flour—currently comprise about one-fifth of the value of food and farm products imported into Egypt. Even if that market share were to stay constant, Gardner notes, U.S. exports would grow.

Farming is confined to less than 3% of Egypt's total land area, even though nearly all arable land is already farmed intensively.

"By 1990," he says, "assuming continued rapid population growth and only slight income gains, Egypt will probably import over 8 million tons of wheat and flour from all sources, up from 7 million tons in 1984."

In many cases, projected increases in imports of other farm goods are more impressive: possibly around 4 million tons of corn by 1990, up from 1.7 million tons in 1983; 1 million tons of sugar, up from 716,000 tons in 1983; 500,000 tons of vegetable oil, up from 330,000 tons; and 500,000 tons of meat, up from 225,000 tons.

"Egyptian farmers certainly won't be able to meet all the increased need," says Gardner. "They can't meet the nation's food needs now, and about half of the total food supply is imported."

Egypt's farmers are finding it difficult to keep up with demand generated by a 2.8-percent annual population growth rate and rapidly increasing per capita consumption of many basic commodities.

Limited Farmland

"Almost all arable land is already farmed intensively," says Gardner, "and attempts to expand croplands through desert reclamation have largely been nullified by urban expansion. Farming is confined to about 3 percent of Egypt's total land area, occupying almost exclusively the narrow ribbon of soil deposited along the Nile River."

Government programs to fill this food gap have led to increasingly larger imports of basic commodities, including wheat, wheat flour, corn, vegetable oils, meat, sugar, dairy products, and pulses.

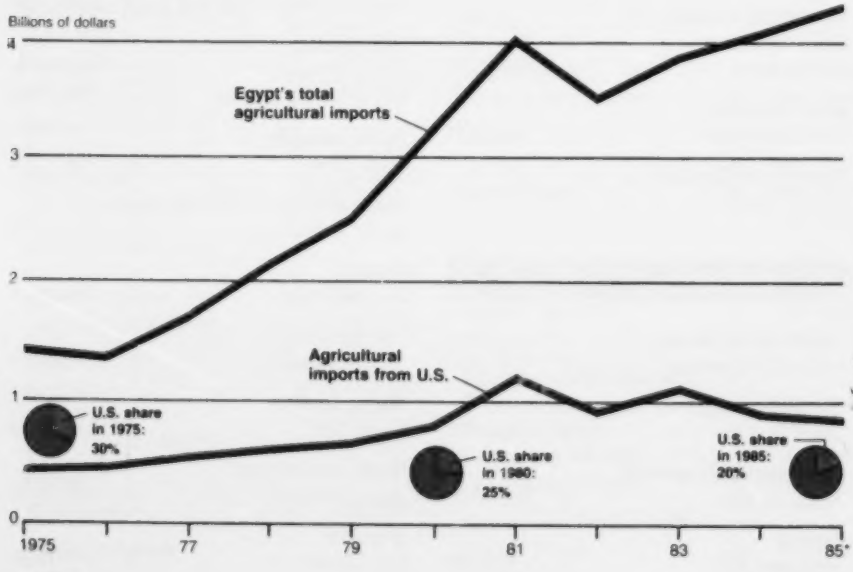
The U.S. share of the Egyptian market, however, has recently slipped to about 20 percent. From 1977 to 1984, the U.S. share averaged 28 percent. The slippage largely reflects tougher competition from other exporters. The European Community has usually been Egypt's second largest supplier, providing a variety of high-value and bulk commodities. Other significant suppliers are Australia and Brazil.

"Because of increased competition from other suppliers, the magnitude of U.S. agricultural exports to Egypt in the near future will depend heavily on financial arrangements," says economist Parker.

Credit and export programs will be the key to recovering and maintaining our market share. Much of what the United States now exports to Egypt is purchased under credit programs which permit deferred payments.

The short-term credit advanced Egypt in fiscal 1985 included $50 million for U.S. wheat, $30 million for wheat flour, $55 million for tallow, $75 million for tobacco, $56 million for cotton, $54 million for feed grains, and $11 million for livestock products.

Credit and Sales Incentives May Be the Key to Protecting Our Share of Egypt's Growing Import Market



*Estimated

Irrigation is critical to Egyptian food production. In the village of Qoota, a farmer works in a field that will produce rice, onions, and fodder.

Long-Term Credit Helps

In addition, Egypt received $225 million for fiscal 1985 purchases under the long-term credit provisions of P.L. 480, America's "Food for Peace" program.

"From the Egyptian viewpoint, this financing is preferable to the short-term guarantees," says Parker. "P.L. 480 financing stretches out the repayment period for up to 30 years and carries interest rates of 2 to 3 percent. A further, flexible option allows Egypt to repay its P.L. 480 loans with local currency in fiscal 1986. This should ease Egypt's foreign debt load, which is now $32 billion."

In contrast, short-term credit must be paid off in 3 years to commercial banks, and the interest rate is near the prevailing U.S. prime rate.

Egypt is also being aided by the U.S. Export Enhancement Program, which provides surplus farm commodities as a "bonus" to stimulate sales to targeted foreign markets.

One agreement with Egypt involves 175,000 metric tons of wheat flour to be sold at a price of $180 per ton (about $66 below the world price in early October). The sale will bring in more than $30 million. Another agreement involves a $55 million sale of 500,000 metric tons of wheat at $110 per metric ton.

"This price is possible because, on proof of delivery, USDA will award the exporter wheat from Commodity Credit Corporation stocks as a bonus worth an average of $21.87 per ton," says Parker.

But he adds that U.S. traders can't be complacent—even with the help of credit and export bonus programs—in the face of fairly fierce competition from other traders.

"Egypt is a growing market, and the United States will continue to be pressured by the EC and Australia, particularly for a greater share of wheat and wheat flour sales." □

[Based largely on information provided by economists George R. Gardner and John B. Parker of the International Economics Division, Economic Research Service.]

A Mixed Pattern of U.S. Sales

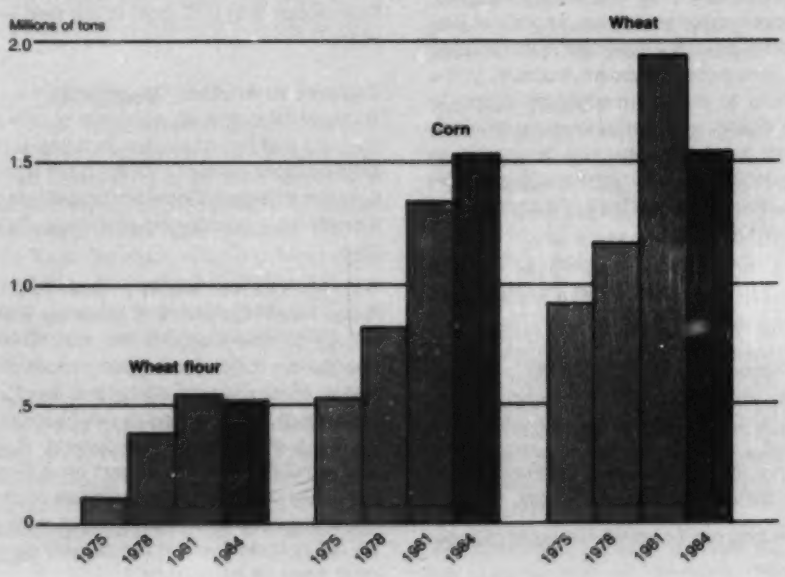
U.S. farm exports to Egypt have remained on the verge of breaking the $1-billion sales mark since 1981, but recent sales are down.

In 1981, U.S. farm sales reached $967 million. The following year sales fell to only $800 million, mostly because of reduced sales of poultry products and lower corn prices. U.S. exports climbed to $970 million in 1983, but went down again in 1984 to $909 million. Lower prices for U.S. farm goods are partly responsible for this stagnant sales picture.

Export volumes have been very volatile. U.S. wheat exports rose from 1.2 million tons in 1980 to 2 million tons in 1983, but fell to 1.5 million tons by 1984. Wheat flour exports jumped by more than a million tons, zooming from 338,000 tons in 1980 to 1.4 million tons in 1983. But, by 1984, wheat flour sales had plummeted, dropping to about 500,000 tons. U.S. corn exports to Egypt went up from nearly 1 million tons in 1980 to 1.5 million tons in 1984.

Economist John Parker estimates U.S. farm sales in 1985 at about $860 million, with export volume close to 1984 levels. A variety of programs should cause the value to rise in 1986, but sales outside government programs may be only a fifth the 1981 peak of $500 million.

Sales of Major U.S. Farm Commodities to Egypt Show a Mixed Pattern in the 1980's



Improving China's Livestock Industry

When the Chinese government set a goal of more meat in the nation's diet, trade analysts waited for a sign. The sign came when China began importing top-quality pigs, chickens, and dairy cattle from several nations, including the United States, to improve the bloodlines of its native stock.

The breeding program could be a very positive sign for trade, according to economist Francis Tuan of USDA's Economic Research Service.

For now, shipments of American animals represent a new sales outlet for U.S. farmers, Tuan says.

For the longer term, these shipments provide concrete evidence of the Chinese government's commitment to improving the variety and quantity of meat, milk, and eggs in the Chinese diet. This has potential trade implications because larger meat production would almost certainly require China to buy more equipment to process animal feeds and meat. A growing livestock sector could also lead to greater, long-term dependence on feed grain imports.

Tuan explains that "in modernizing its livestock sector, China will face a wide variety of issues. Cross-breeding to improve varieties is only one. As cross-breeding improves native bloodlines, imports of livestock will probably slow down considerably. But, to support a modern industry, China will have to ensure an adequate supply of feed grains and other feed ingredients, secure the technology and equipment to manufacture animal feeds on a large scale, and develop scientifically balanced feed rations for livestock."

It's in these areas, Tuan says, that the United States could become a major supplier.

Increased U.S. Corn Exports?

Take corn as an example. Sales of U.S. corn (and other grains) to China have taken a nose dive since the 1983/84 season and are not likely to improve substantially, at least through the end of this year.

In the long run, however, that could change.

Most analysts agree that the Chinese would save time and money by importing the technology and equipment.

The reason: It's unlikely that China would be able to produce an adequate corn crop to meet the country's increased livestock feeding needs and also live up to export trade agreements that have already been signed with the Soviet Union and Japan.

In addition, "the majority of corn and other feed grains are grown in north and northeast China," Tuan says. Because highway and rail systems in the interior of the country are so poor, it is very difficult to transport the grains to the south. Southern areas produce more than a fourth of the nation's meat animals but only 2 percent of the feed grains.

"In the south, there are corn-deficit areas right now because of the transportation problems," he adds. "In some cases, it will be easier and more cost effective to export corn grown in the north from China's northern ports and import corn from abroad into the south. It would not be surprising to see this happen with U.S. corn in the next few years."

Equipment: Another Opportunity

Transportation and an adequate supply of corn are just two obstacles to a self-sufficient livestock sector. Once the grain is produced or imported, China will probably face considerable processing problems, Tuan says.

Although Chinese industry currently produces small equipment, it lacks the technology to manufacture the machinery needed for major feed grain processing plants. Most analysts agree that the Chinese would save time and money by importing the technology and equipment, Tuan says, and the need to import on a large scale may come fairly soon. China's poultry and egg production is increasing at rates of 50-100 percent a year in the densely populated areas of the country.

The Chinese have already purchased some Japanese and European manufacturing equipment. Although there have been no purchases of any major U.S. equipment, the outlook for U.S. manufacturers is good.

One reason is that the U.S. Feed Grains Council (which represents American feed grain producers) donated a state-of-the-art compound feed manufacturing unit to China last year. Installation of the equipment, scheduled for completion this month in Nanjing Province, will allow the production of about 90,000 tons of feed a year, far greater than the capacity of any other equipment currently in use. The unit was donated to China to create a market for U.S. feed grains, according to Mike McDaniel, a Council representative.

But the project may also help promote U.S. equipment, Tuan adds.

"It has impressed Chinese officials because, unlike any other equipment they have, microcomputers control feed formulations. This increases speed and efficiency. The Chinese are now seriously considering purchasing some U.S. machinery. Apparently, the wide range of software available for the American equipment gives it an advantage," Tuan says.

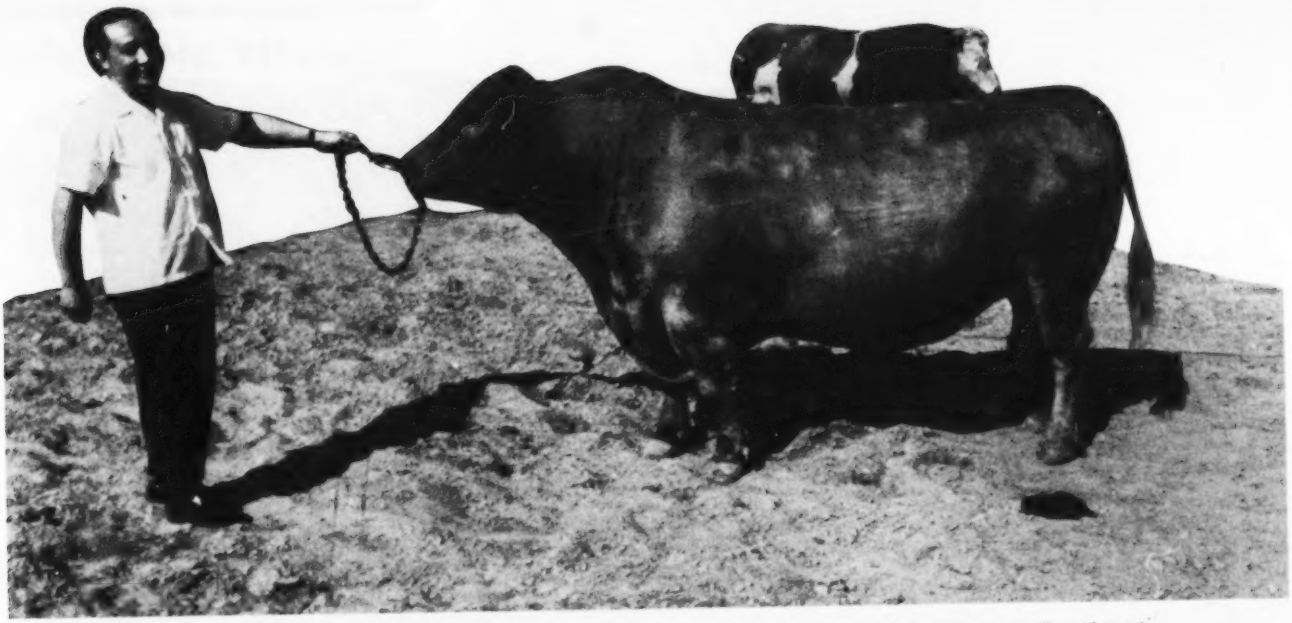
Before any of this equipment or technology is imported on a large scale, however, China's livestock industry will have to improve substantially. And that's where cross-breeding China's native stock with imported stock will play a major role. The Chinese are initially concentrating on poultry, dairy cattle, and swine.

U.S. Livestock Shipped in '85

Last year, China imported a significant number of live farm animals from the United States, Tuan says, referring to approximately 1,200 dairy cows (mostly Holstein heifers), 1,190 pigs, and about 100,000 chicks.

So far in 1986, shipments have totaled 353 Holstein dairy cows and 1,836 pigs. Additional shipments are in the planning stages, Tuan says.

These continuing shipments are largely the result of revisions in 1983 and 1984 health



Imported beef and dairy bulls are improving the bloodlines of native Chinese stock and may soon help put more milk and meat on Chinese tables.

agreements between the United States and China. The revisions, which took effect on December 1, 1985, for cattle and on January 1, 1986, for swine, further relaxed China's very strict health requirements for livestock shipments from the United States.

It was the revision, according to Marlene Stinson of USDA's Animal and Plant Health Inspection Service, that led to last year's shipment of 1,197 head of U.S. breeding cattle valued at $3.4 million.

Still, Tuan says, China's health requirements remain tough for U.S. livestock shipments. The major reason: fear of bluetongue, an ongoing problem in the western United States. Bluetongue, a viral disease which is potentially lethal in sheep (although not harmful to humans), is usually transmitted by insects found on cattle. The Chinese are so concerned about the threat of bluetongue, which is not believed to exist in their country, that they've virtually banned cattle shipments from the western United States and imposed a series of costly and time-consuming tests for cattle shipments from other parts of the country.

Most of the cattle that have been exported to China from the United States have come from the upper Midwest and the Northeast, in areas that are free of bluetongue. One shipment from Washington state was made in 1985 under a special waiver, Stinson says. For the 1986 season, China is now recognizing that portion of Washington west of the Cascade Mountains as an eligible area for the export of cattle.

The current health requirements include: approval by a Chinese veterinarian of each animal and each farm where the export animals were raised; isolation of cattle and swine for at least 30 days prior to shipment; testing for bluetongue and a variety of other diseases, including brucellosis and tuberculosis in cattle and several diseases in poultry.

After their arrival in China, the animals are again placed in quarantine, this time for 45 days. Then, the cattle and swine are retested. Similar restrictions apply to poultry.

Stiff Competition

All these requirements place U.S. producers at something of a disadvantage when competing with other exporters. None of our current competitors—Canada, the Netherlands, New Zealand, Austria, and West Germany—has any bluetongue problems, and, consequently, each has been able to negotiate less restrictive health and quarantine requirements with China.

The bottom line, according to Tuan, is that it is probably cheaper for other exporters to ship livestock to China than it is for the United States. In the United States, costs of conducting the required tests on cattle range from $80 to $140 per animal, Stinson says.

What's more, Canada and China have already signed a 5-year trade agreement, clearing the way for Canadian shipments of cattle, swine, and poultry, in addition to livestock semen and embryos. Another Canadian-Chinese agreement, reportedly worth $2.1 million, will send Canadian educators and technicians to China's Harbin Domestic Animal Breeding Center in Heilongjian Province to train Chinese personnel in the management and scientific techniques of artificial insemination. How much of this specialized market may be available to U.S. exporters is still not clear, Tuan says. Although negotiations are currently in progress, no agreements regarding semen and embryos have been formalized.

Two-Way Trade

While the primary emphasis so far has been on sending U.S. livestock to China, U.S. trade officials are also considering importing Chinese swine, as well as swine embryos and semen, into the United States. The objective: cross-breeding Chinese and U.S. swine here.

According to Bert Hawkins, administrator of USDA's Animal and Plant Health Inspection Service, the Chinese breeds have several advantages over U.S. breeds. "Chinese hogs are extremely prolific and can subsist on a bulkier diet. One drawback, however, is that they do not gain weight as fast as U.S. breeds," Hawkins says.

"No agreement between the two nations has been reached yet," he adds. "But we

Native Chinese hogs yield fatty meat and are relatively slow to gain weight, but they do have larger litters than American breeds.

plan to continue discussions that may lead to increased two-way trade in breeding stock that will improve the livestock and poultry industries of the United States and China." □

[Based largely on information provided by economist Francis C. Tuan of the International Economics Division, Economic Research Service.]

An Overview of the Industry

China's livestock sector has made notable gains in recent years. Red meat production jumped an impressive 80 percent between 1978 and 1984, according to USDA economist Francis Tuan of the Economic Research Service.

Tuan notes, however, that China's still-developing meat sector is not yet ready for comparison with the well-established meat industries of the United States or Western Europe. Such comparisons are useful only in providing perspective.

China's red meat output, for example, was 15.4 million metric tons in 1984. U.S. meat production that same year was 17.8 million metric tons. Given China's much larger population (more than 1 billion people, versus around 235 million Americans), per capita consumption comparisons are lopsided. Average red meat consumption in China was only around 30 pounds per person in 1984, versus more than 177 pounds in the United States.

China still has a long way to go in improving its livestock sector, Tuan says, but tremendous gains have been made during the last few years. Using the most recent data available, he gives a brief overview of China's livestock industry:

• *Poultry.* This is the fastest growing sector of China's livestock industry, probably because chickens have higher feed conversion ratios (more meat produced per pound of feed) than other meat animals. Generally speaking, poultry is still produced in backyard, household operations, mostly in rural areas.

China's Bureau of Agriculture and Forestry reported that in Nanjing, Jiangsu Province, a farmer could earn a 10-yuan net profit from raising one laying hen. Multiplied times 100 layers, the net profit may amount to 1,000 yuan, a nice living given the average per capita farm income of only 355 yuan a year. Consequently, the number of households specializing in poultry production in Nanjing increased to 70,000 in 1984 from a reported 26,500 in 1983.

• *Dairy.* During the last few years, the growth rates of both dairy cow numbers and milk output averaged about 15 percent a year. China's 1984 dairy herd totaled 1.3 million cows, and milk production reached 2.19 million metric tons. Holsteins make up about 70 percent of the herd. The rest are classified as dual-purpose dairy cattle. Most of China's dairy cows are raised in state-run farms near cities.

Per capita milk consumption is very low in China, averaging just under 5 pounds a year. (Americans drink an average 243.4 pounds of fluid milk and cream, and consume 582 pounds, milk equivalent, of all dairy products.) China's urban residents fare better than those living in rural areas: Consumers in Beijing averaged almost 42 pounds of fluid milk in 1984, but over 11 pounds of that was provided by a World Food Program project.

Milk yields per cow are not available for the country as a whole, but are generally much higher in the north. Management depends heavily on manual labor, with mechanized milking limited only to very large farms. Poor herd management and inefficient or unscientifically formulated feeding are the major obstacles to modernizing China's dairy industry.

• *Hogs.* China's hog industry is characterized by its large animal inventory and low annual meat output. With an inventory of around 300 million hogs, pork production totaled only about 14.5 million metric tons in 1984. While U.S. production—at 6.7 million metric tons—is roughly half that of China, it came from a 1984 inventory of fewer than 55 million hogs and pigs. China, however, is making progress, having almost doubled its pork output between 1978 and 1984.

Meat quality is another problem. Consumers, particularly those in urban areas, want lean pork, yet most of what's available is fatty. Native Chinese hogs characteristically yield fatty meat.

Cross breeding with imported varieties has helped to put more lean meat on the table. Cross-bred hogs yield 55 to 58 percent lean meat, compared with yields of 40 to 45 percent from native Chinese stock. Although promising, cross breeding efforts need to be greatly expanded.

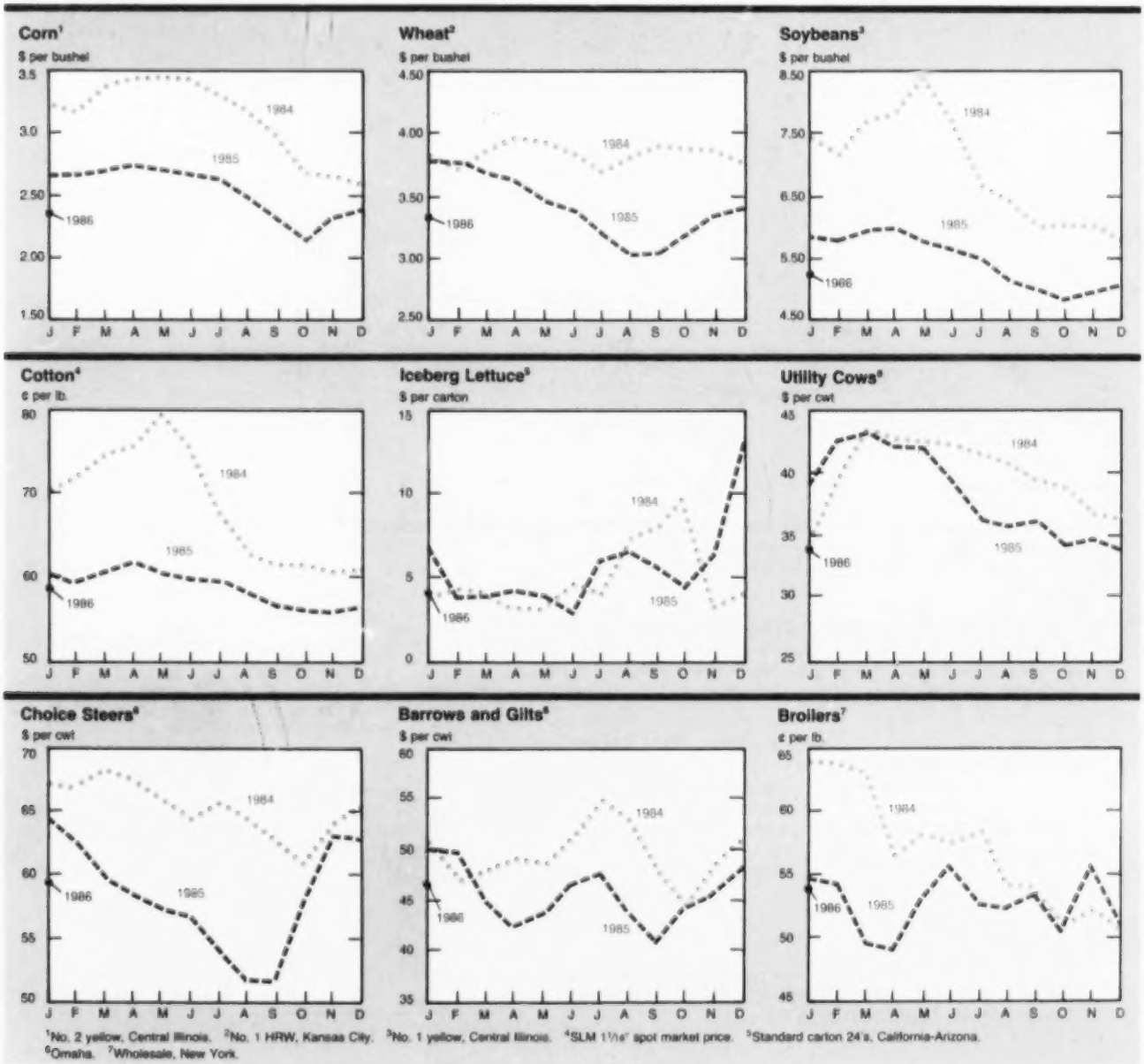
In the meantime, consumer demand will continue on an upward trend. Per capita consumption averaged about 28 pounds of pork in 1984, up from only 17 pounds in 1978. And pork, incidentally, makes up about 94 percent of all red meat consumption in China.

• *Beef and other ruminants.* Basically, cattle are raised for field work and transportation, not as a source of food. Animals slaughtered for meat are usually those that are considered too old or too lame for work. In 1984, around 3.9 million head were slaughtered, only 4.7 percent of the total cattle inventory.

FARMLINE TRENDS

Monthly Price Monitor

USDA's January index of farm prices declined 3.1 percent and was almost 9 percent below year-earlier levels. Corn, at $2.37 per bushel, was about even with December's price, but wheat declined 10¢ to $3.32. Soybeans rose 15¢ to $5.29, the highest price since July 1985. Cotton climbed to 58.4¢ per lb., also the highest since July. Prices for lettuce returned to more "normal" levels after jumping above $13 in December. In the meat animals area, broiler prices gained about 4¢ to 54.1¢ per lb., while choice steers dropped below $60 per cwt. Utility cows gained $1 to $34.86 per cwt. Barrow and gilt prices declined to $46.65. Monthly average prices for all commodities shown were lower in January 1986 than in January 1985.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1 1/16" spot market price. [5]Standard carton 24's, California-Arizona. [6]Omaha. [7]Wholesale, New York.

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PERSPECTIVES

IN THE 25 YEARS THE ECONOMIC RESEARCH SERVICE HAS EXISTED, there have been six Presidents, nine farm bills, seven Secretaries of Agriculture, and a continually changing agenda of key agricultural issues. Much of the analysis that has come from ERS has been critical to the day-to-day workings of the agricultural sector, while other research has laid the groundwork for farm policy and the study of future problems. But what exactly has ERS done that the average American would see as, well, important? For some answers, we interviewed Wayne Rasmussen, an Agriculture Department historian for more than 45 years. His reflections on ERS begin before the agency (in its current structure) was formed in April 1961. He traces some accomplishments way back to 1922, when the old Bureau of Agricultural Economics (ERS' predecessor agency) took shape.

"One of the very early accomplishments was recognizing that farmers needed economic information in order to make decisions. This led to the first Outlook Conference in 1923. Prior to that, farmers got some information on the economics of managing and running a farm from USDA's Office of Farm Management and the Extension Service. But as far as world crop prospects, or even national prospects for the various crops, farmers really didn't know what to expect. It became very apparent that for farmers to formulate their cropping plans, they'd have to have information on commodity supplies and prices. Farmers were at a disadvantage in not knowing. Big grain buyers, for example, had the resources to get this kind of information, but no individual farmer could possibly collect all of it. USDA outlook information helped create a level playing field between the sellers and buyers of farm products."

Today, outlook information is a major thrust of ERS. Using it, "people should be able to make better decisions," says economist John Lee, current administrator of ERS. "The basic purpose," Lee continues, "is to share what is known. That's why we have an Outlook Conference, to bring together expertise from all over the country with what we know (in ERS) and get the best possible information to people out in the country. It's also why we publish some 90 outlook reports a year on subjects ranging from exports to commodities to foreign agriculture."

"Whether dealing with farmers, agribusiness, USDA policymakers, the White House, Congress, state and local governments, or consumers, our real job is helping people understand the economic environment in which they operate and the factors affecting that environment," Lee says.

"Our audience isn't aware that most of the numbers and much of the analysis they see in the farm press are generated right here in ERS, or its sister agencies," historian Rasmussen continues. Some examples: the GNP (Gross National Product) numbers for the agricultural sector; virtually everything on farm income and expenditures -- production receipts, debt, asset values; farm export values; supply and demand for commodities; natural resource information such as land use, water use, input supply and demand; foreign regional commodity information; and a variety of rural sociological and economic data — the number of beds in hospitals, the components of the population by age, race, and gender.

The agency has had its share of "firsts," according to Rasmussen. "In the 1960's, ERS broke ground in recognizing the importance of the world food supply to the United States. We were the first to put together comprehensive information on the subject, to actually measure the world food supply and anticipated world food needs." And in 1973, "Calvin Beale, chief demographer in ERS, was the first researcher in the nation to document the trend of rural immigration — that there were more people moving into rural areas than into cities."

Looking ahead, what does Rasmussen see as the most important focus of the agency? "There will be a great emphasis on understanding our exports and economic competition on the world market," he says. "Also, the question of biogenetics. Farm structure, size, and the number of farms will continue to be important. And I see a renewed interest in rural development. Something we must come to terms with is the economics of protecting the environment."

"A lot of people out there are doing this or that piece of work similar to a piece that's being done in ERS," Lee says, "but you won't find any other place that has the same comprehensive national and world scope or the same broad responsibility to represent not a private business interest nor a particular political interest, but the general interest of society."

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Policymakers are tackling the ongoing problem of milk surpluses with two new government programs: one that lowers support prices, and one that is buying entire dairy herds. Economists Cliff Carman and Jim Miller explain how the programs are designed to work and offer some thoughts on what the impacts will be.

Cotton's Comeback with Consumers *by Ellen Banker* 10

Americans bought more cotton in clothing and other textiles last year than they have in over a decade. Why all the popularity? Three major reasons: advertising and promotion, consumer preference, and price.

Competing for the Colombian Market *by Doug Martinez* 12

Colombia is one of the top Latin American markets for U.S. agricultural exports. Our farm exports have increased five-fold since 1970 and are expected to go much higher in the years ahead, but the competition will be tough.

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Americans are eating more but spending less of their incomes on food. This special chart page takes a look at some gainers and losers among foods, the American calorie count, and food spending.

The Dairy Buyout: A New Approach To an Old Problem

Once again the floodgates opened up on milk production last year, after the dairy diversion program reduced output in 1984. With 1985's surplus still a fresh memory, the question is: Will dairy provisions in the new farm bill curb the tide of milk?

Milk production rose to a record 143.7 billion pounds in 1985, up from about 135 billion in 1984 and 140 billion pounds in 1983. Along with larger production, government purchases of surplus dairy products climbed to 13.2 billion pounds last year, up from 8.6 billion in 1984 but down from 1983's record 16.8 billion pounds.

The 1984 diversion program, which paid farmers not to market milk, provided only short-term relief.

"The diversion program did what it was designed to do, not what people hoped it would do," says Cliff Carman, a dairy analyst for USDA's Economic Research Service.

"It was just a respite, not a solution to overproduction. The program contributed to a short-term drop in milk output, but the production resources, dairy herds and facilities, weren't significantly changed."

Carman says some farmers were able to trim milk production without slaughtering as many cows as originally anticipated. So, within 3 months after the program ended, they were able to substantially increase production.

Also, low feed grain prices encouraged farmers who were not participating in the program to maintain their herds and increase milk output by feeding more to each animal, Carman notes.

While the 1984 program provided only temporary relief, dairy provisions of the Food Security Act of 1985 (the official name for the new farm bill) aim for reductions in dairy surpluses through the rest of the decade.

Help for Surpluses in 1986

The Food Security Act seeks to cut milk surpluses through changes in the support price farmers receive for their milk and through the whole herd buyout program, which encourages some dairy farmers to leave the industry.

Farmers staying in dairying will bear about 38 percent of the cost of the buyout program.

Under the legislation, the 1986 support price for milk is to remain at its current level of $11.60 per cwt. Then, there are a series of scheduled price reductions: On January 1, 1987, the support price will drop to $11.35, and on October 1, 1987, it will be lowered to $11.10, where it may remain through December 31, 1990.

Certain conditions, however, could cause a variation in the level of support during 1988-90. The milk support price in these 3 years is directly tied to success in reducing government purchases of dairy products. Depending on the level of estimated government purchases, the support price could rise or fall by 50 cents each year. Therefore, the support price could be as low as $9.60 or as high as $12.60 by 1990.

The dairy provisions of the legislation also require producers to pay 40 cents per cwt on all the milk they market during April 1 through December 31, 1986. The deduction will drop to 25 cents per cwt during January 1 through September 30, 1987. The deductions were instituted to offset some of the costs of the whole herd buyout program.

On top of 40-cent deductions and falling support prices, the Gramm-Rudman-Hollings deficit reduction law will further shrink dairy farmers' paychecks. To offset rising government expenditures, the law requires milk producers to pay up to an additional 12 cents per cwt during April 1 through September 30, 1986.

After subtracting the deductions, the average price for all milk in 1986 could be $11.75 to $12.15 per cwt, down from $12.61 in 1985 and $12.95 in 1984.

The average price doesn't match the support price because prices vary with the grade of milk. The $11.60 support price is the price for manufacturing grade milk, which must be processed into items such as butter, cheese, and nonfat dry milk.

Milk that meets the higher sanitary standards for fluid use commands higher prices and raises the average price for all milk.

"The projected effective price range ($11.75 to $12.15) only corrects for the legislated deductions. It doesn't include deductions for dairy product promotion, which are now 15 cents per cwt, or the farmer's transportation costs of delivering milk to the plant," Carman says. "Taking these factors into account lowers the farmer's returns even further."

How the Buyout Works

Falling milk prices likely figured heavily in producers' decisions to participate in the whole herd buyout program, which began April 1, 1986.

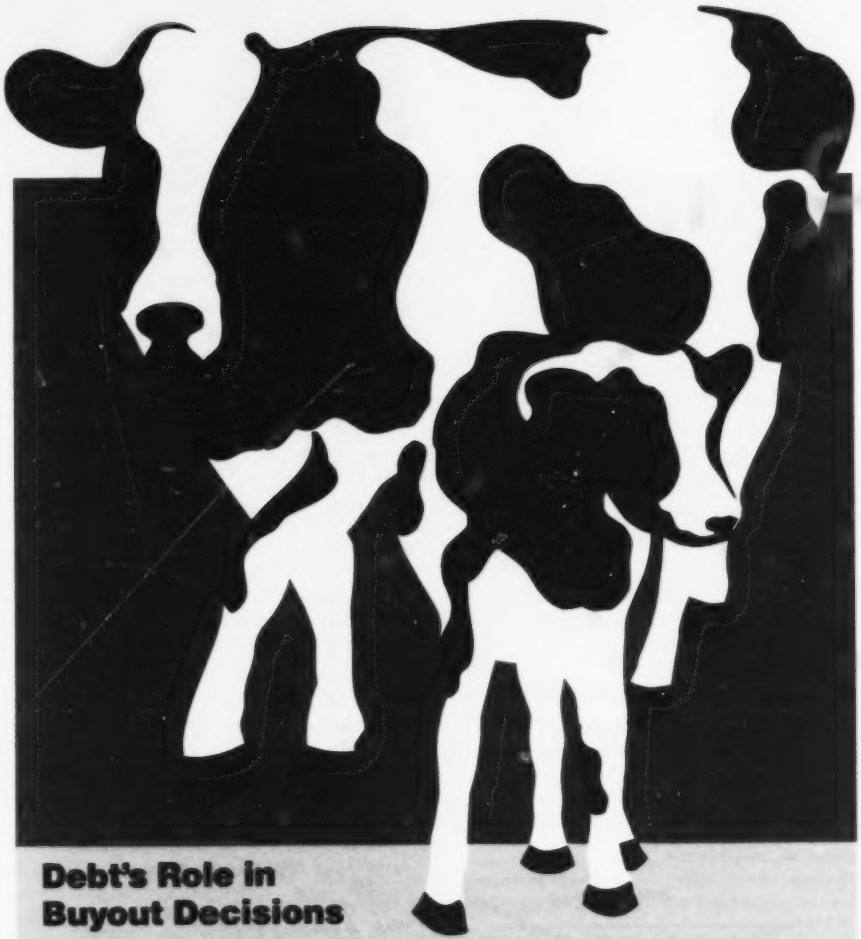
Program signup ran from February 10 through March 7. Producers interested in participating submitted bids based on 1 year's production from their herds to USDA's Agricultural Stabilization and Conservation Service.

USDA tentatively accepted 13,988 bids from a total of 105,700 bids by 39,534 dairy farmers. Multiple bids were possible because herd liquidation is to be spaced over three periods (April-August 1986, September 1986-February 1987, and March-August 1987), and some producers submitted one bid for each period.

Producers submitted bids based on their marketings of milk during July 1984 through June 1985, or their calendar 1985 marketings, whichever total was smaller. The bidding farmers marketed about 33 billion pounds of milk in 1985, about 23.5 percent of the U.S. total.

Bids were in terms of cwt of milk and ranged from $3.40 to over $1,000. The maximum bid accepted was $22.50. Payments to farmers will be spread over 5 years.

What changes will the payments buy? Those whose bids have been accepted will



Debt's Role in Buyout Decisions

Although it may be difficult to fathom the motives of those who signed up for the whole herd buyout program, economists suspect that debt played a role in many decisions.

"Some farmers may have felt they did not have a choice about program participation. Large debts and the need for family income may have forced some producers to sign up. Some of the decisions may virtually have been made by lenders, instead of dairy farmers," says dairy analyst Cliff Carman.

Sizable numbers of milk producers have been under financial stress for some time. At the start of 1985, 21 percent of U.S. dairy farms had debt-to-asset ratios of 40 to 70 percent, and 11 percent had debt-to-asset ratios of over 70 percent. Three percent of the dairy farms were technically insolvent, with debts amounting to more than 100 percent of the value of their assets.

Because of lower feed costs, last year wasn't quite as bad as 1984 on the returns side, but debt problems probably worsened as a result of further declines in asset values.

For some dairy farmers, then, the buyout program may have offered the choice of getting paid for going out of business or just going under. However, once a farmer is out of dairying, alternative jobs in and out of agriculture may be difficult to find.

"In the Northeast and Midwest, where many dairy farms are located, off-farm opportunities are limited. For example, hiring in the U.S. auto industry is low, and new jobs aren't being created. The lack of alternatives may have kept some dairy farmers out of the program," Carman says.

have to end all milk production and stay out of dairying for the 5 years the government is paying them. All the female dairy cattle they own have to be slaughtered or exported, and they may not allow other dairy farmers to use their facilities during that time.

The outcome of the signup slightly exceeded the legislated target. The farm bill targeted a 12-billion-pound reduction in milk output over the course of the three liquidation periods. Bids totaling 12.3 billion pounds were tentatively accepted. Actual milk production probably won't drop by the full 12.3 billion, because some nonparticipating farmers are expected to expand production.

This drop in production will cost USDA a total of $1.8 billion spread over 5 years. But the 40-cent and 25-cent deductions mandated by the new farm bill will take $650-$700 million off the cost. This means that farmers staying in dairying will bear about 38 percent of the cost of the buyout program.

According to dairy analyst Jim Miller, also with the Economic Research Service, the bids varied greatly.

"Most of the successful bidders were probably producers willing to leave dairying early," Miller says. "A producer with worn out facilities who can find good alternative employment or is close to retiring could bid much less than a producer with newer facilities who's not ready to retire."

Impact on the Meat Market

The buyout program raises a concern that goes beyond the effects on the dairy industry. The slaughter of additional cows seems to threaten an already burdened red meat industry. However, the farm bill attempts to deal with this situation.

The dairy provisions require the Secretary of Agriculture to estimate the number of additional cows likely to be slaughtered because of the new program and to schedule the slaughtering in such a way as to have the least impact on the red meat industry. The three liquidation periods are the response to this requirement.

(continued on next page)

Commercial use of all milk and dairy products rose more than 6 percent between 1983 and 1985. School-age children are a primary market.

"Asking producers to elect one of these periods allows USDA to control the number of cows going to market, thereby not flooding the market with meat and driving prices down," Carman says.

"However, many of the bidders elected the first period," Miller adds. "Therefore, much of the extra meat supplies will show up this spring and summer."

The law also requires USDA to buy an additional 400 million pounds of red meat. Half of it will be exported and the other half will be donated to domestic feeding programs, such as the school lunch program.

"The important issue is that USDA get in and remove a large share of the extra meat in the first 6 months, particularly during the spring quarter when the largest number of cows will likely be slaughtered," says livestock analyst Ron Gustafson.

April estimates indicate that, because of the dairy program, beef supplies will rise 3 to 4 percent this spring and about 3 percent this summer.

"Federal red meat purchases this spring and summer will be used in the domestic feeding programs later in the year, when the impact of the herd buydown will be negligible," Gustafson says.

"As for exports," Gustafson continues, "USDA has made a strong commitment to remove 200 million pounds of red meat from the market through exports or possibly U.S. military commissaries overseas. In addition, some live cows from the buyout program are likely to be exported."

Despite the expected increase in slaughter and concerns over excess meat, according to Gustafson, meat supplies are expected to be down in 1986 — but not down as much as previously forecast.

A Better Balance?

Whether the new program will pay off with a better balance between supply and demand in the dairy industry remains to be seen, according to Carman.

"Even with a successful program, milk production will probably rise slightly this year because the program wasn't in effect this winter and not all participating producers will leave the industry at once," he says. "However, the program may keep the rise in milk production below the expected rise in commercial use, giving sales a chance to cut into the surpluses."

The increase in 1986 milk production will also depend on the lower feed grain prices expected this fall.

"If corn prices are low this fall, dairy farmers could still profitably feed their cows at the lower support price," Carman says. "This prospect may have encouraged some farmers to stay in dairying, regardless of the buyout option." □

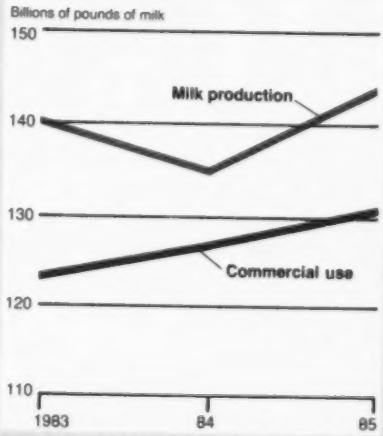
[Based on information provided by economists Cliff Carman, Jim Miller, and Ron Gustafson of the National Economics Division, Economic Research Service.]

A Sales Boom?

While output of milk and dairy products continues to exceed consumption, commercial use is on the rise. Some analysts even call it a sales boom. Perhaps the American lifestyle is swinging back toward the use of dairy products.

Commercial use of all milk and dairy products (milkfat-equivalent basis) in 1985 rose more than 3 percent from a year earlier. The gain from 1983 to 1984 was also over 3 percent. Therefore, growth in sales showed the largest 2-year increase since the early 1940's.

Milk Production Rebounded in 1985, But Commercial Use Also Increased



"Commercial use has been on a fairly strong uptrend since late in 1983, and last year's increase was large. Declines in inflation-adjusted dairy prices, an improving economy, and recently expanded promotion efforts are the roots of the uptrend," says dairy analyst Jim Miller.

Concern over the lack of calcium in women's diets (potentially leading to osteoporosis, a bone-destroying disease) may affect future dairy consumption.

"Young women are low dairy product consumers, and many drink virtually no milk," Miller says. "It's a tough market, but it's also one that claims to be health conscious. Whether health concerns will make them change their ways remains to be seen."

In any case, Miller is convinced that prospects favor continued gains in dairy product sales. "If we can get production down and keep it down, commercial use will catch up," he says.

REPORTS IN THE NEWS

Absorbing Large Capital Losses

Agriculture does not have an income problem today as much as it has a problem of absorbing large capital losses. This conclusion emerges from a careful review of data on financial conditions in the farm sector. The data, from a recently published report covering 1984 and earlier years, reveal the following:

- The farm sector's net cash income (cash receipts minus cash expenses) has been on a slow, but fairly steady, upward trend since 1977. In 1984, net cash income reached an all-time high of $39.2 billion, up $900 million from 1983.

- While net cash income continued to move upward, the farm sector's balance sheet deteriorated in the 1980's. After rising steadily in the 1960's and 1970's, the equity of farm asset owners fell about 20 percent from 1980 to 1984, slipping to the lowest level since 1978. This occurred partly because of rising debts—though debt dropped slightly in 1984—but mostly because of falling farm asset values. Assets dropped from a peak of more than $1.1 trillion to about $956 billion in 1984. This largely reflected sharp declines in farm real estate values, which account for about three-fourths of agriculture's assets.

An overall view of agriculture's financial condition may obscure the problems of individual groups of farmers, but it does indicate that farming is still a basically profitable activity. Returns to farming have remained relatively stable over recent decades. However, returns to investments in farm assets, particularly land, have deteriorated. The drop in farm sector equity has been especially painful for those farmers who accumulated large debts investing in farm assets in the late 1970's, and who counted on borrowing against continued capital gains to meet cash flow needs.

This report treats the entire farm sector as a single business enterprise, providing various statistical measures of earnings, expenses, assets, and liabilities—all at the national level.

Economic Indicators of the Farm Sector: National Financial Summary, 1984, *formerly titled* ***Income and Balance Sheet Statistics.*** *(Published January 1986; 85 pages, mostly data tables; GPO Stock No. 701-015-00004-5; $5.00.)*

Yardsticks of Performance

Among the most important yardsticks of American agriculture's performance are trends in production and efficiency. Here are some recently published measurements, updated to 1984, on how the farm sector has been doing:

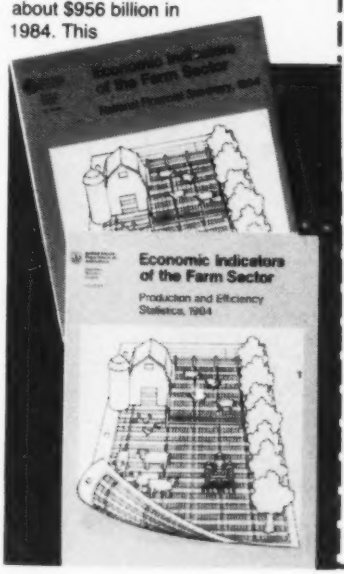
- Total U.S. farm output doubled between the early 1940's and the early 1980's. Although 1984 production recovered from 1983's depressed level, it did not match the peaks of 1981 and 1982.

- Crops were harvested on 348 million acres in 1984. Acreages were greater in 1980, 1981, and 1982. Before that, however, you'd have to go back to 1952 for a higher figure. An estimated 111 million acres—around one-third of the 1984 total—were used to produce crops for the export market. In 1950, only 50 million out of 345 million crop acres—about 1 in 7—were harvested for export.

- On average, each person working on a U.S. farm—including farm operators, family helpers, and hired workers—produced enough agricultural products for an estimated 77 people in 1984. That total includes 57 Americans and 20 people abroad. In 1960, the average U.S. farm worker produced enough to supply only around 26 people here and abroad.

- An estimated 3.7 billion hours of labor were used on farms in 1984. It took 2.2 billion hours to grow crops, roughly 1 billion hours to raise livestock, and around 500 million hours to handle overhead and miscellaneous operations.

Economic Indicators of the Farm Sector: Production and Efficiency Statistics, 1984. *(Published February 1986; 68 pages, mostly data tables; GPO Stock No. 701-015-00005-3; $5.00.)*



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AGRICULTURAL ROUNDUP

Fighting Back Against Famine

Famine, or the threat of famine, continues to haunt a number of less developed nations—and particularly those in the drier parts of Africa. What can they do in coming years to help themselves?

They can't easily look for lessons in the relative security of the industrialized world. If the wealth, resources, climate, and technological advantages of North America and Europe are needed to reduce vulnerability, then periodic famine in Sub-Saharan Africa might be inevitable.

The inevitability of famine, however, is not an idea easily accepted by economist Carl Mabbs-Zeno of USDA's Economic Research Service.

Although severe droughts will continue to occur in Africa, the high malnutrition and starvation death rates associated with famine can be avoided, he contends.

He points to some of the lessons learned in recent years by India, Bangladesh, China, and other nations once prone to frequent famines. These lessons, he suggests, can probably be transferred to Sub-Saharan Africa where many people, even in normal crop years, live on the edge of starvation. Strategies to reduce vulnerability vary, but some common elements emerge as important:

- local food storage systems, including storage facilities and emergency food reserves stockpiled during good crop years.
- improved transportation systems for getting food from surplus to shortage areas.
- an accurate system for monitoring crop supplies, food deficits, and food price movements. Systems that depend on unverified reports by local officials or production managers can be dangerously misleading, especially if these same officials are held responsible for meeting government quotas.
- avoidance of overemphasis on nonfood export crops, such as cotton or coffee, that may take too many resources away from basic food crop production.
- programs to encourage greater self-sufficiency and further diversification in staple food crops to avoid overdependence on food imports or on a single basic food crop.
- incentives for producers. Policies that hold food prices down by keeping farm prices low can be self-defeating for a food-deficit nation.
- policies to protect soil productivity, particularly if fertile land is at a premium.
- a system to get useful information out to farmers on soil conservation, better production practices, and market prices and policies.

Acreage Plans for 1986

The season's first official look at spring planting prospects suggested that farmers were planning small to moderate acreage reductions for most major field crops.

Overall, farmers reported intentions to plant around 336 million acres to 15 major field crops, a 4-percent decline from the 349 million acres seeded in 1985.

"The figures, of course, will change," notes economist Larry Van Meir of the Economic Research Service. About 45,000 growers were surveyed in early March, just before the signup began for this year's acreage reduction programs. Final decisions on program participation add to the usual uncertainties accompanying any early survey of farmers' intentions.

"We expect participation in the programs to be higher than it was last year. If participation is significantly higher, that would imply a larger reduction in plantings than the survey indicated," says Van Meir. "For a good reading on planted acreage, however, we'll have to wait until July 11 when USDA's Crop Reporting Board publishes the results of its June acreage survey."

In USDA's March *Prospective Plantings* report, farmers said they intended to:

- cut feed grain acreage about 5 percent, from 128 million acres in 1985 to about 121 million this year.
- reduce both soybean and sunflower plantings to the lowest levels since 1977. Based on the intentions for spring-planted wheat and last fall's seedings of winter wheat, all-wheat acreage would be the lowest since 1978.
- cut corn acreage to the lowest level (barring the 1983 PIK year) since 1974, and cotton to the lowest (barring 1983) since 1975.
- increase plantings of oats, pima cotton, hay, dry edible beans, and sugar beets.

"Although acreage will be down for two-thirds of these crops and more land will be held out of production than last year, the indicated reductions are not as great as many observers had expected. Good weather and high yields could mean another fairly large harvest," says Van Meir.

"We'll be ending the 1985/86 marketing year with record-large stocks of wheat and feed grains. Another large harvest would make it very difficult to significantly cut these stocks during the upcoming 1986/87 season."

Producers Report Preliminary Planting Intentions[1]

	1985 planted acreage	1986 planting intentions	Change, 1985 to 1986
	thousands of acres		percent
Corn	83,348	78,066	−6.3
Sorghum	18,285	15,853	−13.3
Oats	13,270	14,435	+8.8
Barley	13,108	12,859	−1.9
All wheat	75,575	71,101	−5.9
Winter	57,752	53,992	−6.5
Durum	3,207	2,920	−8.9
Other spring	14,616	14,189	−2.9
Rice	2,522	2,270	−10.0
Soybeans	63,130	62,045	−1.7
Peanuts	1,492	1,445	−3.2
Sunflower	3,055	2,605	−14.7
All cotton	10,709	9,711	−9.3
Upland	10,625	9,613	−9.5
American-Pima	83.8	98.0	+16.9
Hay[2]	60,553	60,933	+0.6
Dry edible beans	1,576	1,746	+10.7
Sweet potatoes	109.8	104.5	−4.8
Tobacco[2]	701.0	648.7	−7.5
Sugar beets	1,125	1,186	+5.5

[1]Based on a voluntary survey of about 45,000 growers in early March.
[2]Area harvested.

If the vulnerable nations avoid future famines, it will only be because they have made a long-term commitment to take the necessary steps.

• recognition on the part of governments that agriculture plays a vital role in the economy, so that resource allocation decisions do not automatically favor industrial development at the expense of long-term productivity gains in agriculture.

To all this, economist Mabbs-Zeno adds: "The history of famine is conspicuous for the presence of war. War or civil strife has been a factor in some of the worst famines on record."

Another factor has been internal politics that favor urban over rural populations, or majority groups over religious, racial, or political minorities. The avoidance of famine, he maintains, presupposes a political commitment on the part of a nation's leaders to feed the population.

Political systems in which the people can hold officials responsible for their actions may have a built-in advantage. India's democratic style of government, for example, is given credit for "motivating national leaders to respond vigorously to local food shortages," he notes.

Mabbs-Zeno's study shows thousands of famines touching almost every part of the globe over the last 2,000 years. Today, he says, science offers some tools for famine protection. New seed varieties may be more resistant to drought. Because of modern pesticides and biological controls, locusts and other insects no longer present quite the threat they once did.

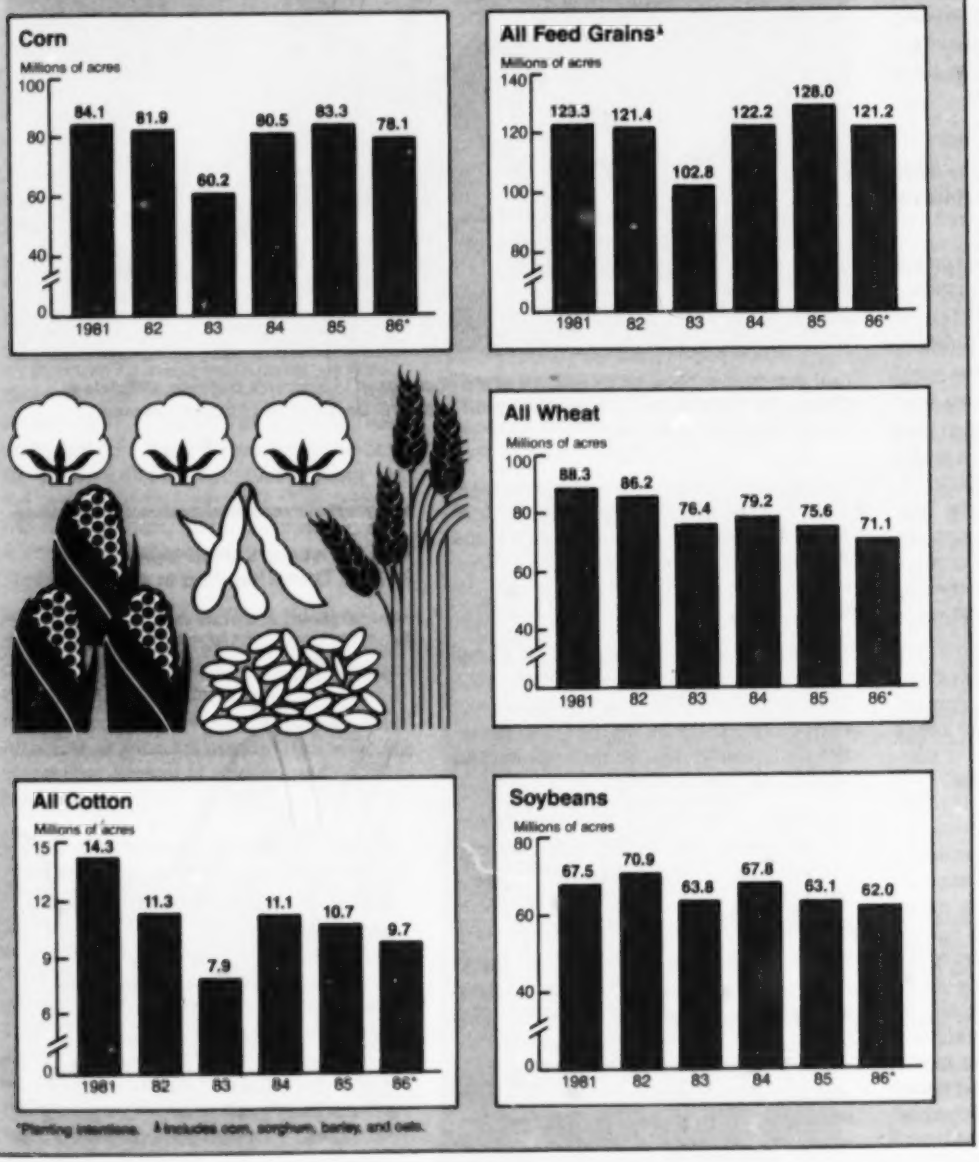
The consequences of famine, too, are somewhat more manageable. Modern pharmaceuticals are often able to contain the epidemics of typhus, cholera, and dysentery that were once major causes of famine deaths. Combined with emergency aid programs, this scientific progress has reduced the likelihood of famine in all countries of the world.

Nevertheless, science cannot prevent inevitable variations in weather and crops, and the consequences of these variations can still be enormous. Because natural uncertainties are unavoidable, Carl Mabbs-Zeno emphasizes the importance of overcoming the continuing political and economic problems that limit an effective response to food crises.

"If the vulnerable nations avoid another famine, it will only be because they have taken the steps to prevent it," he says.

In his view, public policies based on the successful experiences of other less developed countries—policies that anticipate and prepare for crop shortfalls—are the best insurance for preventing future food shortages from quickly turning into famines.

The emphasis here is on the word "insurance," he cautions, because history shows that no nation—rich or poor—can claim complete protection from famine.



*Planting intentions. ¹Includes corn, sorghum, barley, and oats.

Cotton's Comeback with Consumers

Very few analysts predicted it would happen, but Americans bought more cotton in clothing and other textiles last year than they have in over a decade.

Although the figures are still preliminary, USDA analysts have pegged the per capita use of cotton at 17.2 pounds for 1985. Use could jump to nearly 20 pounds this year, according to USDA economist Terry Townsend of the Economic Research Service. And, during the next few years, Townsend says, it could easily match the levels of the early 1970's, when each American used over 20 pounds of the natural fiber.

Why all the popularity?

According to Townsend, there are three major reasons: advertising and promotion, consumer preference, and price.

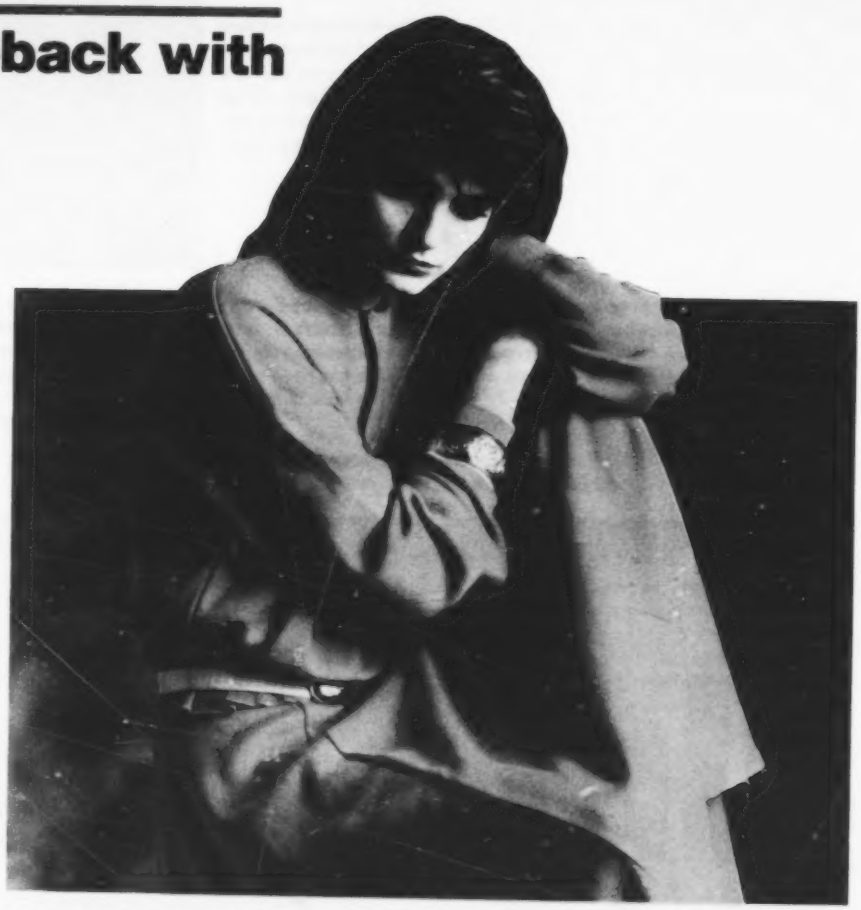
Advertising is difficult to assess, but cotton industry officials believe that it has made a tremendous impact, "and considering the numbers we're seeing, that's a hard fact to dispute," he says.

Cotton producers actually underwrite their own advertising campaigns. For each bale of U.S. cotton sold, the farmer pays a fee for advertising and promotion. The money is channeled through Cotton, Inc., the producers' marketing and research company, and it's spent on such projects as product development, technical and marketing research, export promotion, and advertising.

The industry's "Seal of Cotton," now commonly seen on tags attached to domestically manufactured clothing and other products, is an example of what a successful advertising campaign can do.

Cotton's Seal of Recognition

The cotton seal is now one of the most recognizable symbols in industry, according to Hal Brockman, a senior vice president of Cotton, Inc. Last year, in a survey sponsored by Cotton, Inc., 80 percent of the Americans polled recognized the seal, which was developed by the company in 1972. Results of the first recognition survey, taken in 1973 after only 1 year of use, found that 18 percent of the people polled knew what the seal represented. "We've come a long way," Brockman says.



Last year, cotton made up 33 percent of the fibers used in women's clothing. Officials at Cotton, Inc., believe this 100-percent cotton outfit will be the style of things to come.
Photo courtesy of Cotton, Inc.

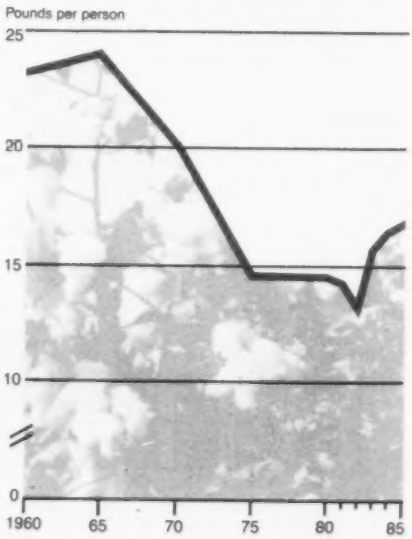
Townsend agrees. The industry has come far in regaining its domestic markets and the interest of American consumers following two decades of losses to the manmade fiber industry.

"Remember, cotton always had the corner on 50 or 60 percent of the fiber market," Townsend says. "Then, along came polyester around 1963. People saw it as something of a miracle fiber, something new and very fashionable."

The result: Cotton's traditional markets—clothing, home furnishings, and industrial uses—began to wane. By 1975, cotton's share of the fiber market was down to around 30 percent.

"Although cotton's share of the fiber market dipped into the 29-percent range during the next few years," Townsend says, "it's gradually regaining some strength." In 1985, cotton's percentage of the fiber market hit a 10-year high at 30.3 percent. "And we expect to see significant increases in the next few years," Townsend adds.

U.S. Consumers Used More Cotton in 1985 Than They Had In a Decade



The "Seal of Cotton" is one of the most recognizable symbols in industry today.

Cotton's comeback required a little compromise in the industry, however. "Initially, a product was either 100-percent cotton or 100-percent polyester. Neither industry was interested in combining their fibers. In the end, however, blending was the answer, especially for cotton," Townsend says. Many scientists argued that blending would combine the best features of both fibers: cotton's durability, and its ability to "breathe," with polyester's strength and easy-care practicality. In the 1970's, most of the blends were predominantly polyester, probably because of cotton's tendency to wrinkle. But new weaving techniques improved cotton's wearability, and the percentage of the fiber's content in many fabrics is increasing.

It's a Natural

"Natural Blend®" fabrics of at least 60-percent cotton are becoming common, according to Townsend. The current industry standard for men's dress shirts is a 60/40 blend, with the emphasis on cotton's share of the fibers. Though this standard has been tagged a Natural Blend® by the cotton industry, it's called a "reverse blend" by the manmade fiber industry. "The original industry-standard blend for men's dress shirts was 65/35, in favor of polyester," Townsend says.

How much of this increase can be attributed to consumer preference? "Another difficult assessment," Townsend says, "but many industry surveys point toward a renewed interest in natural fibers. It seems that American women are especially conscious of the fiber content of clothing and household products."

Fashion trends for women may actually be a great indicator of what's ahead for fibers. "The women's apparel area responds sooner and more intensely to market changes," says Brockman of Cotton, Inc. According to industry figures, cotton's share of the women's apparel market hit a low of 16 percent in 1975. Last year, cotton constituted 33 percent of the fibers used in women's clothing. Brockman expects to see this figure increase every year. And, he says, consumers are definitely demanding cotton-rich products. "When consumers demand cotton, retail stores demand it from the apparel manufacturers, who in turn demand cotton fabrics from the mills, which results in the mills purchasing a greater number of bales of cotton."

U.S. mill use of cotton hit a 5-year high of 5.9 million bales in 1985. "In 1986, we expect to see a mill use of about 6.2 million bales," Townsend says.

This significant increase in use may have one other notable cause: price. The price differential between cotton and manmade fibers is disappearing.

Cotton's Competitive Price

Cotton used to cost considerably more than comparable manmade fibers. Throughout the 1970's, cotton's cost was an average 25 percent higher. In the 1980's, however,

"Natural Blend®" fabrics of at least 60 percent cotton are becoming common. The current industry standard for men's dress shirts is a 60/40 blend, with the emphasis on cotton's share of the fibers. *Photo courtesy of Cotton, Inc.*

prices have gotten closer together. Right now, cotton prices are just slightly more. "But, following the implementation of the cotton provisions in the new farm bill, cotton could cost less than polyester," Townsend says. This hasn't happened since the 1960's and early 1970's when manmade fibers were still catching on and the economies-of-scale in production had not reached their current levels.

"The general perception now is that cotton will remain cheaper than polyester for some time," he adds.

The new farm bill (officially tagged the Food Security Act of 1985) will play a major role in keeping cotton competitive, price-wise. This farm bill mandates that USDA set the cotton loan rate at the world price, which, using early April figures, is about 40 cents. (The current loan rate is 57.3 cents.) The objective is to make U.S. cotton competitive on world markets, and analysts expect U.S. cotton exports to increase substantially as a result.

If the farm bill's cotton provisions were already implemented, the cost of cotton at the gin would be about 40 cents. (Provisions will take effect on August 1.) Compared with production costs for manmade fibers—at about 45 cents per pound if you consider variable costs and around 60 cents a pound for full costs—cotton would have the advantage.

With this kind of outlook, some mills have already increased the percentage of cotton they use in fabrics, Townsend says.

What does all this mean to the U.S. cotton farmer? It doesn't mean too much right now, the economist says. "But, in the long run—maybe two or three seasons from now—it could mean higher farm prices.

"As existing stocks are depleted, and supplies are more in line with demand, farm prices will rise. Then, it will be up to cotton to fight to maintain its improved market share relative to manmade fibers." □

[Based on information provided by USDA economists Terry Townsend and Sam Evans of the National Economics Division, Economic Research Service.]

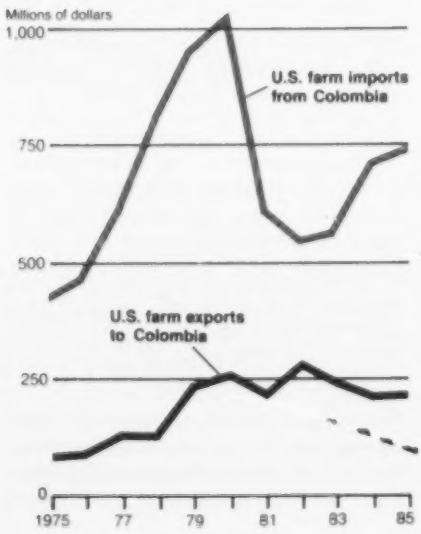
Competing for the Colombian Market

Colombia is one of the top Latin American markets for U.S. agricultural exports. Our farm exports to Colombia have increased five-fold since 1970 and are expected to go much higher than the $215-million level reached last year.

After slumping in the last few years, U.S. agricultural sales could rise to around $400 million by 1990, according to economist Christine Bolling of USDA's Economic Research Service. "Purchases of wheat, feed grains, and oilseed products are likely to grow substantially during the late 1980's, mostly because Colombia is climbing out of its economic doldrums."

Colombia, like many of its Latin neighbors, has been handicapped by heavy foreign debt and erratic or declining commodity prices since 1981. In Colombia's case, the major commodity affected has been coffee. Wholesale coffee prices dipped to $1.22 per pound in 1981, the lowest price since 1978. Prices remained in the $1.22 to $1.43 range through 1985 before jumping to more than $2 in early 1986.

U.S. Farm Sales to Colombia Have Nearly Tripled Since 1975, But Are Outpaced by U.S. Imports of Colombian Farm Products



"Coffee is critical to Colombia," says Bolling, "because it provides roughly half of the nation's export earnings."

With its fortunes either cresting or crumbling on the basis of coffee beans, Colombia has recently been reaping a windfall.

Brewing Higher Coffee Prices

Higher coffee prices have been brewed up this year by a drought in Brazil (Colombia's major competitor) that drastically cut world supplies. Moreover, Bolling says, prices paid for the higher-quality Colombian coffee beans are better than average—about 15 cents more a pound than other mild coffee beans as of April 1986.

The result: a sharp upsurge in Colombia's foreign exchange earnings. This situation, however, isn't likely to last much beyond 1987, Bolling says. "Unless something else comes along, the Colombian economy will return to a more normal condition."

That means the growth in food imports from the United States, particularly of wheat, will be driven largely by population increases. "By 1990, Colombia will probably have five million more people, raising the population to about 33 million."

Bolling projects Colombia's wheat imports at 710,000 tons in 1990, an increase of nearly 60 percent from the 1979-81 average of 448,000 tons, of which the U.S. share was 98 percent.

She also sees a doubling of feed grain imports to 433,000 tons, compared with the 1979-81 import average of 210,000 tons, when the U.S. share was also nearly 100 percent. "Feed grain imports will depend, in part, on how rapidly Colombia decides to expand its domestic poultry and pork industries."

From a much more modest level, soybean meal imports should increase seven-fold to 37,000 tons from the 1979-81 average of 5,000 tons.

Competition for Colombia's Market

"The prospects for U.S. farm exports to Colombia will rest on how well U.S. traders compete with other suppliers including Argentina, Brazil, and Canada, and the improvement in Colombia's balance-of-payments," Bolling says.

Higher prices have been brewed this year for premium Colombian coffee beans because of the drought in Brazil.

She notes that "its task in coming to terms with foreign debt is made easier over the long-term because it was a much more conservative borrower than other Latin American nations."

Colombia is now the fourth largest Latin American market for U.S. agricultural exports after Mexico, Venezuela, and Brazil.

Although a major buyer, it maintains a healthy surplus in its farm trade with the United States. In 1985, Colombia sold $759 million worth of farm goods to the United States, or about $540 million more than it imported.

Coffee alone constituted about $467 million of those exports. Colombia's heavy dependence on coffee exports has created a growing determination to diversify into other cash crops.

"Production of cut flowers has grown tremendously," says Bolling, "and this industry has emerged as a major foreign exchange earner. The Colombians are also developing a shrimp farming industry."

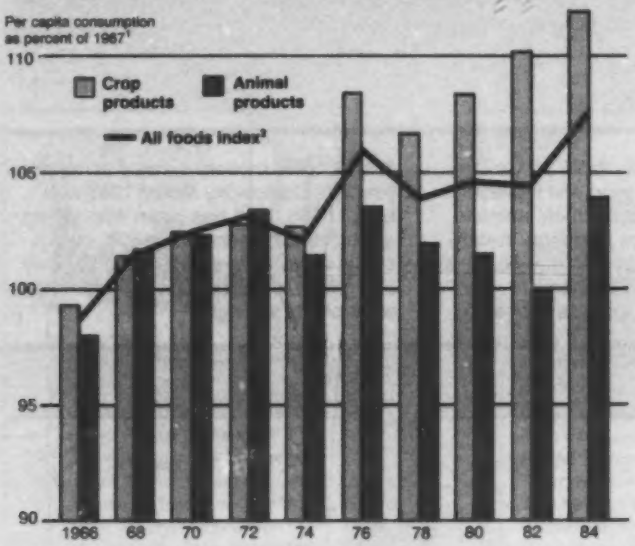
Export earnings from the nonfarm sector could also rise, especially if Colombia chooses to aggressively develop its nickel, coal, and petroleum reserves.

But at least two of its other exports—cocaine and marijuana—are not welcomed by U.S. government officials. □

[Based primarily on information provided by economist Christine Bolling of the International Economics Division, Economic Research Service.]

A Look at America's Menu

Americans Are Consuming More Food Per Person . . . With Crop-Based Foods Gaining at a Faster Rate Than Animal Products



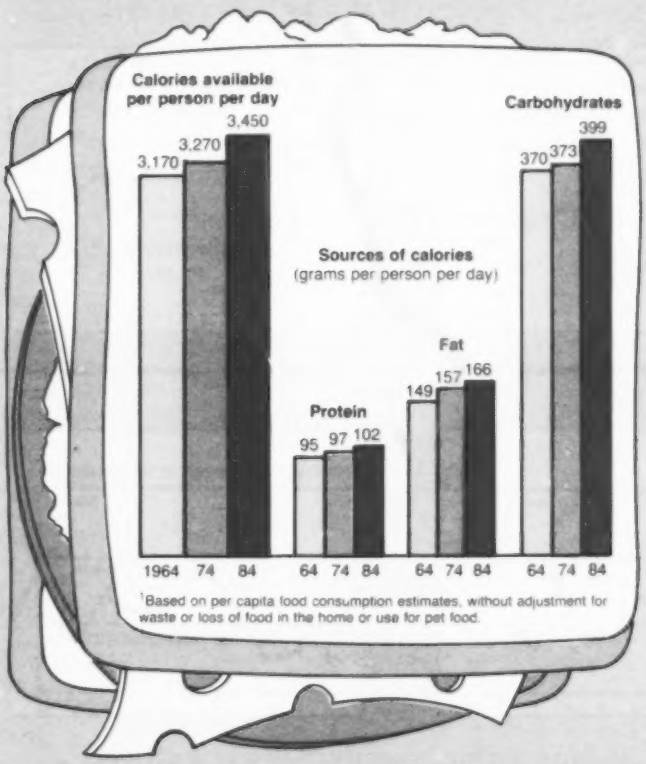
[1]Quantity of individual foods are on a retail-weight basis and are combined with indices using constant retail prices. Consumption data measure "use" of food products rather than what is actually eaten and may include spoilage, waste, use for pet food, etc. [2] Excludes some foods for which data are not available.

Consumption Figures for Different Foods Show Some Gainers . . . And Some Losers

	1964	1974	1984	Change, 1964-84
	pounds per capita[1]			percent
Some gainers				
Low-fat milk[2]	8.7	46.4	80.7	+827.6%
Corn sweeteners	18.1	30.9	77.3	+327.1%
Chicken & turkey	38.8	49.9	67.5	+74.0%
Beer (gallons)	16.5	21.8	24.9	+50.9%
Fresh lettuce	18.9	21.8	24.6	+30.2%
Fresh bananas	16.9	18.5	22.1	+30.8%
Shortening	13.8	16.9	21.3	+54.3%
Tomato products	13.9	17.6	19.0	+36.7%
Fish	10.5	12.1	13.6	+29.5%
American cheese	6.2	8.6	12.0	+93.5%
Rice	7.1	7.5	8.6	+21.1%
Potato chips	3.6	3.9	4.5	+25.0%
Frozen broccoli	0.7	1.0	1.7	+142.9%
Some losers				
Whole milk	248.7	180.0	125.2	-49.7%
Refined sugar	96.8	95.6	67.5	-30.3%
Fresh potatoes	70.9	45.5	49.7	-29.9%
Eggs (dozen)	40.3	36.0	33.0	-18.1%
Coffee	11.6	9.6	7.7	-33.6%
Canned peas	4.1	3.5	2.4	-41.5%
Lard	6.2	3.2	2.1	-66.1%
Canned cherries	1.3	0.7	0.5	-61.5%

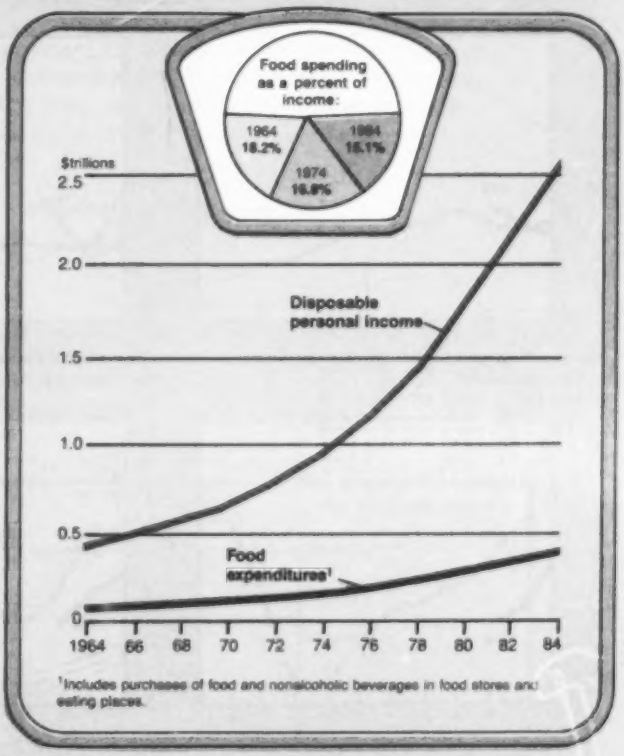
[1]Retail weight basis. [2]Per capita sales.

The Calorie Count Is Up Since 1964, With Most of the Increase from Fats and Carbohydrates[1]



[1]Based on per capita food consumption estimates, without adjustment for waste or loss of food in the home or use for pet food.

But the Calories Come Cheaper When Food Bills Are Measured Against Incomes



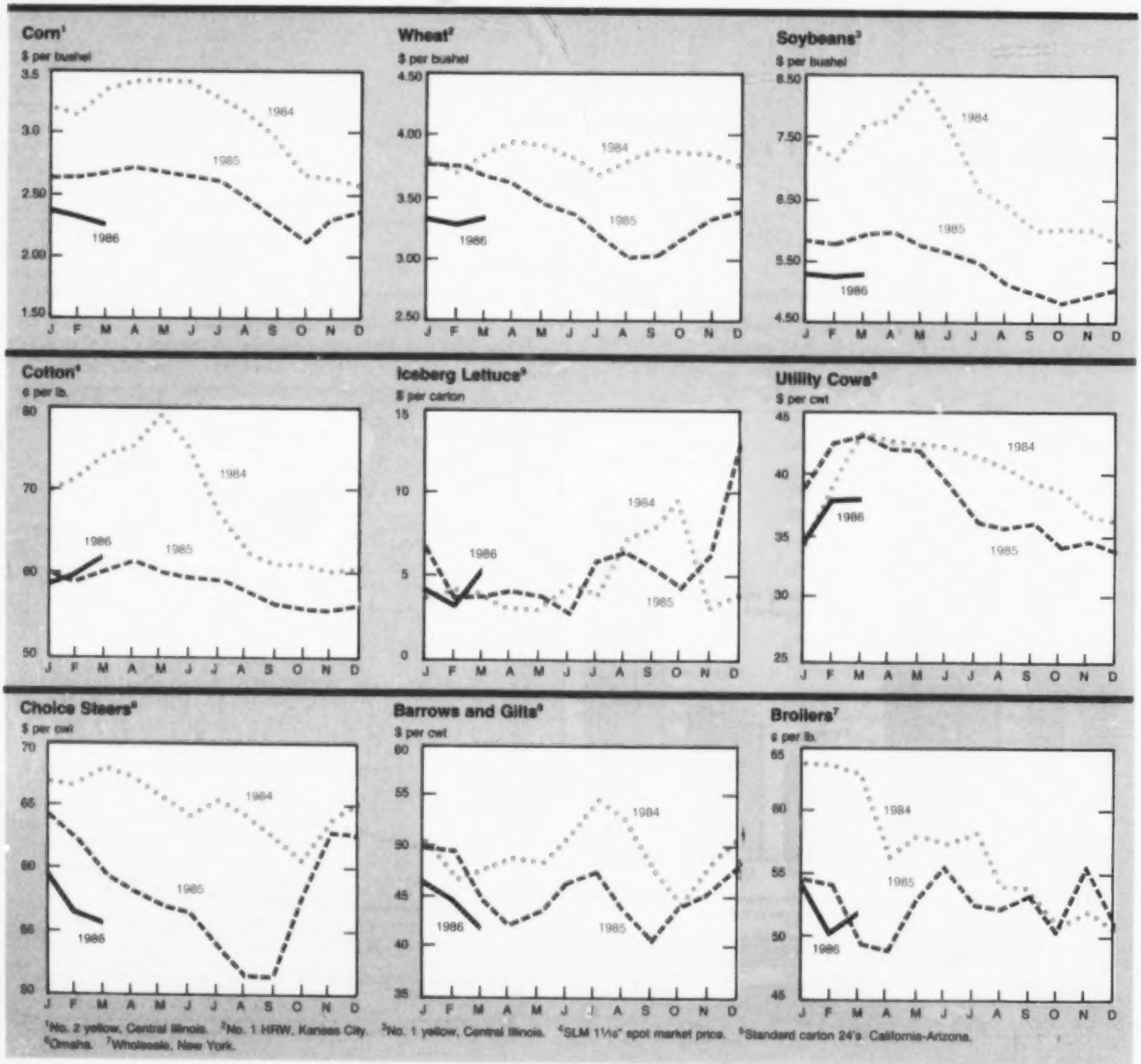
[1]Includes purchases of food and nonalcoholic beverages in food stores and eating places.

Data from the report, *Food Consumption, Prices, and Expenditures, 1964-84*, published by the Economic Research Service and compiled by economist Karen Bunch.

FARMLINE TRENDS

Monthly Price Monitor

USDA's March index of farm prices declined 0.8% and was almost 10% below its year-earlier level. Corn dropped 4¢ to $2.29 per bushel. Wheat edged up to $3.36, the highest since December 1985. Soybeans rose slightly to $5.31. Cotton climbed to 61.8¢ a pound, the highest since August 1984. In the meat animals area, utility cow prices held fairly steady, while choice steers dropped to $55.50, a decline of more than $7 since last December. Barrows and gilts slipped to $41.66, while broilers showed some price strength. Comparing March 1986 with March 1985, corn was down 40¢, wheat down 31¢, soybeans down 59¢, choice steers down more than $4, and barrows and gilts down about $3. All prices shown are monthly averages.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1 1/16" spot market price. [5]Standard carton 24's, California-Arizona. [6]Omaha. [7]Wholesale, New York.

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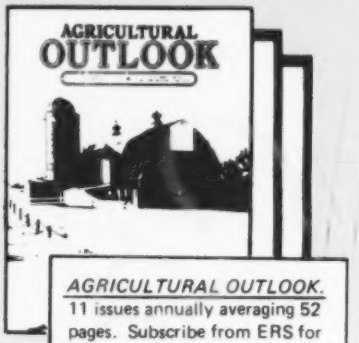

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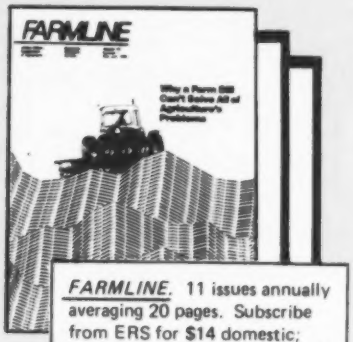

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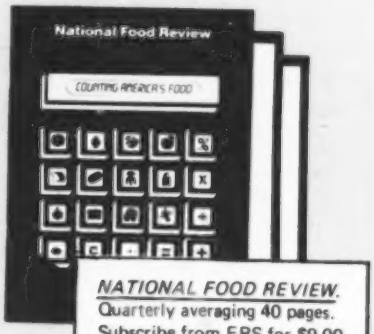

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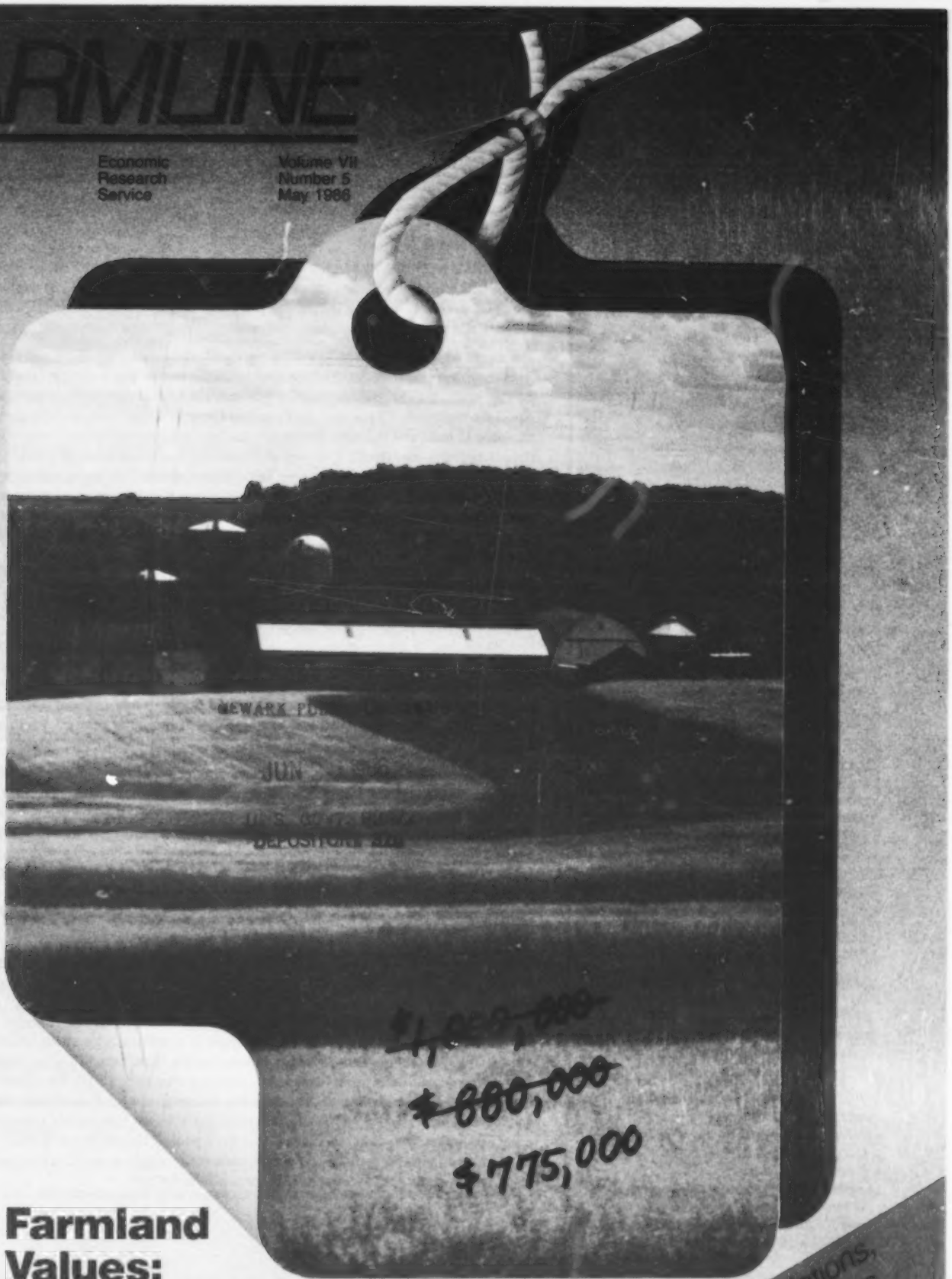

Farmland Values: Where's the Bottom?

Export Nations, Export States
pages 10 & 11

A 93.33/2:

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PERSPECTIVES

THE FIRST SUPPLY-DEMAND FORECASTS FOR THE 1986/87 SEASON are in, and they present a grimly familiar picture: increased world production and large supplies. In these early-May estimates, analysts outline the prospects for major crops. Remember, the forecasts are still very tentative.

The world wheat situation in 1986/87 is expected to resemble that of the past 4 years: Production will outpace consumption, leaving ending stocks at a new high. World production is forecast at a record 510 million tons, up 1% from 1985/86. Large crops are expected worldwide, especially in Canada, China, and the European Community, and record crops are currently being harvested in India and Pakistan. Production declines are expected in the United States, the Soviet Union, Australia, and Brazil. U.S. wheat production is now estimated at 2.18 billion bushels, down nearly 250 million from last year. Despite the reduced U.S. harvest, the total U.S. wheat supply for the 1986/87 marketing year may be a record 4.1 billion bushels, because of the record carryover of old-crop stocks. Total disappearance of U.S. wheat is forecast to be slightly higher than 1986 production. The result: U.S. ending stocks on May 31, 1987, will drop slightly from their current record levels.

World coarse grain production is projected at 819 million tons, down 3% from last season's record level. The primary reason: a sharp drop in prospective U.S. output. U.S. feed grains production is now pegged at 235 million metric tons, down 14% from last season's 274 million. Foreign production, on the other hand, is expected to climb 3%. Increased production is expected in China and the Soviet Union; reduced harvests are anticipated in Australia, Canada, the EC, and several other countries. The U.S. corn crop is forecast at around 7.6 billion bushels, 15% below last year's record. However, total 1986/87 U.S. corn supplies could reach another record, perhaps 9% above last year's, because of the projected carryin of nearly 3.9 billion bushels (also a record).

The oilseeds outlook for 1986/87 points to another record in world production—at 193 million tons—despite a projected 5-million-ton drop in the U.S. soybean crop. The world outlook is being shaped partly by changes in U.S. farm programs. While the loan rate for soybeans in 1986/87 is expected to drop 5%, the wheat and corn loan rates are declining by 25% or more. As a result, the U.S. soybean loan rate will provide a higher price floor than that for grains, and foreign oilseed production should expand. The current production projection for the 1986 U.S. soybean crop is 1.9 billion bushels; total supplies are forecast at about 2.4 billion bushels. If use exceeds production, as analysts now expect, ending stocks will decline slightly from year-earlier levels.

Cotton prospects for 1986/87 suggest a reasonably close balance between world production and demand, with little change in stocks. Beginning stocks are now estimated at a record 47 million bales. Both world production and consumption are forecast at 75.5 million bales. The production figure is only slightly below 1985's 78 million. And the United States is expected to account for all of this decline. U.S. production is now pegged at 11 million bales, down 18% from last season. The U.S. cotton outlook is closely linked to the latest farm bill which mandates that U.S. cotton be competitive in world markets beginning on August 1. USDA has, as required by the legislation, announced a formula for estimating the world price, adjusted for average U.S. quality and location. As of mid-May, the adjusted world price for the base quality cotton was about 33¢, compared with a 1986-crop loan rate of 55 cents a pound. The objective, of course, is to increase U.S. cotton exports. Economists expect the competitive prices to nearly triple the U.S. share of world cotton exports next season to 28% from 10% in 1985/86.

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U.S. producers are accustomed to some competition from Thailand when it comes to selling corn on the world coarse grain market. Lately, however, Thailand has entered a starchy root crop called cassava into the tough competition for corn's markets. Economist Sara Schwartz says increased sales of Thai cassava may have displaced up to 1 million tons of U.S. corn in 1985.

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Farmland Values: Where's the Bottom

Expansion in the early and mid-1970's paid off for many farmers, but others expanded too much or too late as interest rates were rising and land values were leveling off.

The downward trend in farmland values continued during the past year, as 37 states registered declines. In 21 states, values dropped more than 10 percent, while increases were recorded in 11 mainly northeastern states.

For the nation as a whole, average farm real estate values per acre dropped about 12 percent, according to economist William Heneberry of USDA's Economic Research Service. "That makes 2 consecutive years with 12-percent declines," he says.

Heneberry's latest look at farm real estate values—including both land and buildings—covers 10 months, from April 1, 1985, to February 1, 1986. Last year's report covered the 12 months ending on April 1, 1985.

These figures are all based on average values, he explains, so they do mask the wide differences between locations and types of land. Hilly, rocky, or semi-arid grazing land, for example, is averaged with highly productive, high-priced cropland near urban centers.

Nevertheless, the relatively large declines in the latest data suggest that farmland values have not yet bottomed out in many parts of the country.

"We expect to see fewer states with minuses and generally smaller declines during the rest of this year, but a sudden turnaround doesn't seem likely given the recent numbers," Heneberry says.

Both Bearish and Bullish Signs

"All the problems clearly haven't disappeared," he adds. "There are still too many acres available relative to the demand, and some lenders are understandably cautious about financing land purchases. Some buyers may be waiting for prices to drop even further, while a number of farmers who might be potential buyers are still trying to deal with their current debt load."

In addition, some of the factors that influence buyers, including the outlook for commodity prices, exports, and farm income, are not very encouraging this year. Finally, the longer term prospect of smaller government support payments to agriculture (when scheduled target price reductions take effect) may be adding an element of uncertainty and risk for the years ahead.

Along with these general observations, Heneberry maintains that regional and sectoral problems have played a role in some land value declines. In the Texas High Plains, for example, concerns about declining water tables and the future availability of water have affected prices for irrigated cropland. Depressed conditions in the beef cattle sector have weakened the market for pasture and grazing land, especially in parts of the Corn Belt, Northern Plains, and Mountain states.

Of course, he can also point to developments that, by themselves, would tend to attract investors and strengthen land prices. Lower interest rates and oil prices, for example, will help reduce costs of production, making it somewhat easier to turn a profit from a piece of farmland.

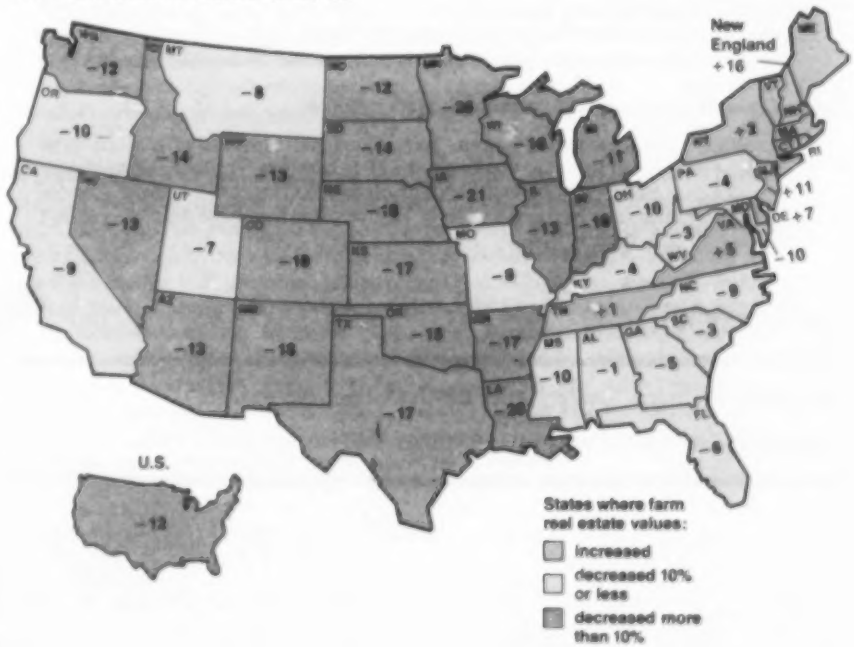
Another bullish indicator is the ratio of cash rents to land values. As land values have fallen, so have cash rents—but not nearly as fast. As a result, the going rents charged by landowners provide a fairly high return relative to the current cost of land. The ratio of rents to land value is now high enough, Heneberry says, to make farmland more attractive than it has been in many years for an investor who wants to buy land and rent it out for farming.

Heneberry suggests, however, that the positive, price-enhancing factors have yet to overcome the psychology of downward trending farmland markets.

The downward momentum can be as stubborn, as difficult to reverse, he says, as the momentum of upward trending markets and the expectations of continued capital gains that they generated. In the late 1970's and early 1980's, particularly, rising markets were slow to recognize changing economic

Farm Real Estate Values Decline in 37 States and Rise in 11 Others

Percent change between April 1985 and February 1986



conditions and the risks implicit in prices that had strayed far out of line with the earning capacity of farmland.

In Heneberry's view, it shouldn't be too long before the market perceives that land values, and production costs, have fallen to the point where investments in farming can be profitable—and that should halt the slide in land prices.

Who's Down, Who's Up?

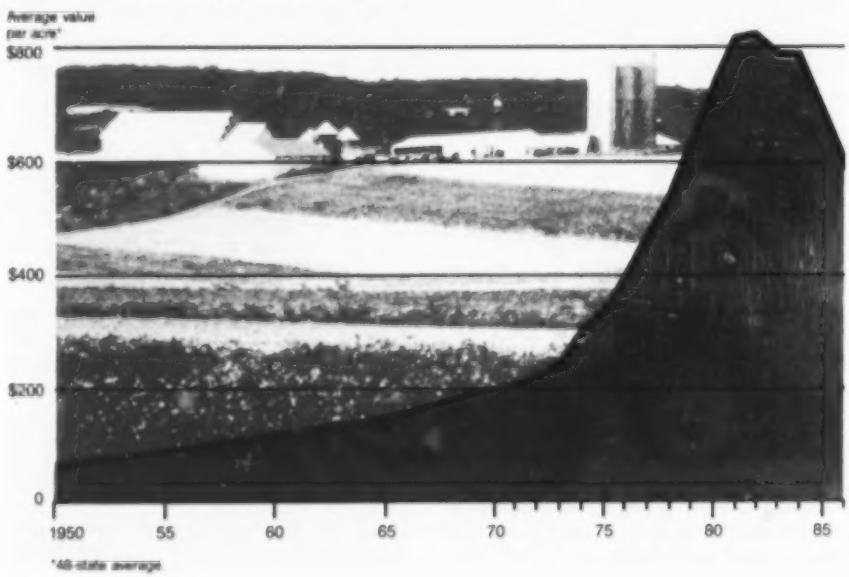
The downward trend in farmland values began 4 to 5 years ago, after 28 years of uninterrupted appreciation. On February 1, 1986, U.S. farmland values averaged $596 an acre, down from $679 last year and nearly a 28-percent decline from the historical high of $823 per acre on April 1, 1982. (The latest value figures range from a high of $3,913 per acre in New Jersey to a low of $134 in New Mexico.)

"Average U.S. farmland values per acre are now somewhere between the levels set in 1978 and 1979," says Heneberry. "Real values, after adjusting for inflation, have retreated to the levels of the mid-1960's."

Not all states, however, have been registering declines. "Between 1985 and 1986, dollar values rose substantially in New England and New Jersey, while Delaware, New York, Virginia, and Tennessee recorded smaller gains," he says.

In New England—where competition for farmland from residential, commercial, and industrial buyers is strong—values increased 16 percent in the last year and about 50 percent, on average, since 1981. In Texas, which did show a 17-percent decline from 1985 to 1986, values are still about 20 percent higher than they were

After Climbing from $200 in 1970 to More Than $800 an Acre in 1982, Farm Real Estate Values Have Dropped Nearly 30%



At the Core of Ag Problems

Declining land values have been at the very core of agriculture's problems over the last several years, according to analysts of the Economic Research Service.

Between 1970 and the early 1980's, farm real estate values, on average, more than quadrupled. The steady, rapid appreciation was far out of line with the growth in the earning capacity of the land. It was propelled by a number of factors: high inflation rates in the general economy; rising exports and projections that a growing world population would depend increasingly on the output from America's farms; low real interest rates and plentiful credit; greater attention to the fact that land is a limited resource; and fairly steady gains, overall, in net cash income from farming.

Perhaps the most important stimulus by the late 1970's, however, was the self-perpetuating assumption in the farm real estate market that the rapid inflation in land values would continue. More than half the returns on farm investment were coming in the form of capital gains, primarily on land.

While the returns a farmer could earn by producing crops and livestock were rising slowly and could vary sharply from year to year, the returns to the ownership of farmland were very dependable and very high. Land was appreciating at an average annual rate of about 16 percent in the late 1970's.

The capital gains encouraged farmers and farmland investors to continue bidding up land values to get access to all this "paper wealth." The paper wealth could easily be converted into real money by using the inflated land values as collateral to help meet cash flow needs, invest in new facilities, or buy more land.

Expansion, in fact, seemed to be a wise business decision supported by the "experts."

The average value of Iowa farmland, for example, was about $600 an acre in 1974. Let's say a farmer bought 500 acres at that price back then. It would have cost $300,000. If the land appreciated at the average rate of Iowa farmland, the 500 acres would have been worth more than $900,000 by 1980. Suppose an adjacent 500-acre farm went on the market. Even though the farmer would know that the earning capacity of the additional 500 acres couldn't support a debt of, possibly, three-quarters of a million dollars, the farmer would still have been tempted to buy the acreage both to enlarge his operation and to reap future capital gains.

Expansion in the early and mid-1970's paid off for a great many farmers, but others expanded too much or too late as interest rates were rising and land values were leveling off. They could support their newly acquired debt only when they were getting large capital gains, mainly in land values. They were counting on being able to borrow against continued capital gains to meet their debt payments and other cash flow needs. For many of them, all that was needed to bring on a crisis was for farmland inflation to slow. It did that, and more.

The bottom fell out of the land market, and some farmers could not get the additional credit or even support their current debt. The underlying causes can probably be traced to a dramatic slowdown in inflation throughout the general economy, a downturn in exports, a sharp rise in real interest rates, a general tightening up of credit, and the gradual realization in the farmland market that the inflated values weren't supported by the economics of farming.

The downturn in farmland values began as lenders tightened up on credit and called in existing loans, and as more farmland came on the market because some farmers couldn't manage their debt payments. The more that values dropped, the greater the number of farmers who had to sell off land or weren't in the position to buy the land going on the market, so the downturn accelerated, feeding on itself.

Many economists contend that it was this decline in the value of farm assets, particularly land, that precipitated the "crisis" for many of the farmers now facing severe financial stress and for many of those who have already succumbed to it.

back in 1981 because of steady value gains from 1981 through 1984.

On the other hand, average values have fallen around 50 percent or more since 1981 in six adjoining states—Iowa, Nebraska, Minnesota, Indiana, Illinois, and Ohio. In Iowa, farm real estate values dropped to $841 an acre this year, down from $1,999 in early 1981 and the lowest they've been since 1975.

The latest figures show some improvement for five of the six states. The exception was Minnesota, which registered a 26-percent drop in farmland values, the largest decline of any state. The other five midwestern states didn't escape double-digit declines, but the percentage drops were not as large as they were the previous year.

"This may be a sign that value declines in the Corn Belt are beginning to taper off, but it's too early to be absolutely sure," says Heneberry. "The developments in agriculture and the general economy over the last few years have made it very difficult to predict future movements in farm real estate values." □

[Based on information provided by economist William Heneberry of the Natural Resource Economics Division, Economic Research Service.]

Japan's Fear of Food Dependence

When Americans hear "Japan," they may often think "trade imbalance." And for good reason. In 1985, the scales were tipped $40 billion in Japan's favor.

But there is another view of Japan: A country trapped in a "catch 22" in which its fears over food dependence on other nations clash with the reality of a limited area and a large population that make it impossible to become entirely self-sufficient.

The predicament has paid off handsomely for U.S. agriculture. Japan has remained America's single largest customer of agricultural products for more than 20 years. In fiscal 1985, Japan bought $5.7 billion worth of American farm products, about a fifth of all U.S. farm exports. But because of the Japanese fear of food dependence, they protect their farms with what may be the bane of U.S. trade: tariffs, quotas, and other measures. Japan also protects itself by attempting to cultivate other sources so it has access to more than one supplier. These attempts have not been that successful, however, and the country is more dependent on fewer suppliers than it was 10 years ago.

Fears of Dependence

The key to Japan's concerns over food dependence, explains Bill Coyle of USDA's Economic Research Service, is that "Japan still remembers the hunger of World War II." Many of the country's resources were diverted to the war effort. This, along with a shrinking empire, reduced food supplies and led to severe shortages.

Fear of dependence has made food self-sufficiency a very popular concept in Japan, and has fueled political pressure on Japanese policymakers to protect and nurture their domestic agriculture. Support for Japanese agriculture is also popular because a large percentage of the population still has strong ties with the farm community.

Just how strongly they support their agriculture and fear dependence may be best explained by a poster that was pasted up by a Japanese farm cooperative organization throughout Japan during the October 1982-April 1984 round of beef and citrus negotiations with the United States. The poster depicts a Ronald Reagan look-alike dressed in a Superman costume, with farm products under his arm, swooping down on a defiant Japan represented by Mount Fuji.

The Japanese are well aware that they cannot escape from the limitations of their islands.

But despite the strong political pressure for domestic farm support and self-sufficiency in agriculture, the Japanese are well aware that they cannot escape from the limitations of their islands. "Agriculturally, Japan is a resource-poor nation," Coyle explains. "The Japanese just don't have the kind of choices that we do in terms of agriculture. There isn't enough land to produce the food Japan's large population requires."

A Labor-Intensive Agriculture

Japan's agriculture also suffers from inefficiency. The nation has a very high yield per acre for most of its crops, Coyle explains. "But farm worker productivity is quite low. For the same amount of time spent, the American farmer produces much more."

This low yield per farm worker stems from their labor-intensive, tiny farms—usually only a few acres each, Coyle explains. Farm size has been limited by land tenure laws enacted during the U.S. occupation after World War II. Socially, this may have been a good plan. But Japan's small farms have required government support and, in some cases, strict protectionist measures to keep Japan's farmers shielded from international competition.

Japan: A Long Way from Food Self-Sufficiency[1]

Commodity	Japan	United States
	percent of self-sufficiency	
Grains	33	162
Food	69	218
Feed	2	152
Beans[2]	7	142
Vegetables	97	99
Fruit	81	95
Meat	81	97

[1]Based on 1980 Japanese data and 1978 U.S. data. [2]Beans include soybeans, red beans, and shelled peanuts.

Source: Japanese Ministry of Agriculture, Forestry and Fisheries.

The Japanese symbol for agriculture.

The beef industry is one example of a strongly protected agricultural sector in Japan. The country realizes that it would be very expensive to become self-sufficient in beef because of the small-scale nature of Japanese beef production, Coyle says. "Efforts to expand production in line with consumer needs have been constrained by limited pasture and forage production and the beef industry's dependence on the slow-growing dairy industry (to provide dairy steers and culled cows for slaughter)," he adds.

In 1984, the Japanese government agreed to expand beef import quotas—from 141,000 tons in Japanese fiscal year 1983 to 177,000 tons in 1987. As a result of these increased imports and a slower-than-projected growth in domestic beef production, Japan's beef self-sufficiency should decline through the rest of the 1980's.

On the other hand, Japan's relatively efficient meat enterprises (poultry and pork) should maintain high levels of self-sufficiency.

Although Japan's livestock industry is small and still in its formative stages, it depends on imported feedstuffs for at least three-quarters of its feed supply. Consequently, Japan is one of the largest importers of feedstuffs in the world. The United States, with its comparative advantage and its capacity to produce and market large amounts of grains and oilseeds, will maintain a prominent position in this Japanese market, according to Coyle. Even though efforts to increase U.S. exports of processed and value-added items will intensify, feedstuffs will continue to be the main component of U.S.-Japanese trade. □

[Based on information provided by economist Bill Coyle of the International Economics Division, Economic Research Service.]

Bovine Biotechnology

Dairy farming has gone through dramatic change since the 1950's, and currently emerging technologies promise to continue reshaping the industry.

In the last few decades, improved equipment and facilities, artificial insemination, and an ever-expanding knowledge of animal breeding and nutrition have contributed to large advances in productivity.

"The structure of the industry itself has been transformed by the increasing productivity and the rising costs of remaining competitive," says dairy analyst Richard Fallert, an agricultural economist with USDA's Economic Research Service.

The figures bear him out: Between 1965 and 1985, the total number of cows on U.S. farms fell more than 25 percent, and the number of farms with dairy cows dropped about 75 percent. Meanwhile, the average amount of milk produced per cow rose about 60 percent, from 8,300 pounds to 13,030 pounds per year. Total milk production climbed 16 percent.

Will the advances of the 1980's and 1990's speed up the spiral of fewer and larger farms—and a smaller U.S. dairy herd—producing more milk? The answer could well be yes, according to Fallert. The major reason: the tremendous advances in technology.

Fallerts sees three major technologies on the horizon—bovine growth hormone (bGH), isoacids as a nutritional supplement, and computerized feeding and herd management.

bGH: More With Less?

In dairying, biotechnology and bGH are almost synonymous right now, probably because bGH promises the greatest potential for change in the industry.

This growth hormone isn't a wonder drug, but it may mean sharp increases in milk output per cow. The hormone is naturally manufactured in small amounts in the cow's pituitary gland. Injection of additional bGH increases body metabolism, which in turn raises blood flow through the mammary gland and increases milk production. In the early days of experimentation, the only hormone available was extracted from the pituitary glands of slaughtered animals. This process was slow, expensive, and produced limited quantities.

The bovine growth hormone isn't a wonder drug, but it may mean sharp increases in milk output per cow.

Advances in biotechnology have changed all that. Now the bGH gene can be transferred to ordinary bacteria cells through genetic engineering techniques.

The gene responsible for bGH is extracted from the pituitary glands of cows and is then scientifically linked to harmless strains of *E. coli* bacteria. The bacteria multiply rapidly, enabling bGH to be reproduced on a large scale. Under current technology, bGH is administered by injections that must be given to dairy cows every day to be effective.

"Research has shown milk yields increase 10 to 40 percent within 3 days of initial injections. A farmer will probably get a smaller increase under field conditions," Fallert says.

There are also some possible drawbacks.

Cost is a major factor. No one knows whether bGH will be initially produced by several manufacturers, and therefore be competitively priced, or whether only one firm will manufacture the hormone and possibly command a high price. Another drawback is the inconvenience of daily injections.

Of course, as with all technologies, the cost per dosage should go down as bGH is more widely produced and adopted. As for the daily injection, according to Fallert, research is underway to develop labor-saving, time-release implants of bGH.

One further drawback to bGH use is the larger amount of nutrients needed to sustain cows with increased milk production. However, overall feed needs may drop because fewer cows are required to produce the increased amount of milk.

"A real benefit is that a smaller percentage of feed goes toward the maintenance of the herd, and a larger percentage goes into milk production," Fallert says.

Use of bGH may be profitable for efficiently run dairy operations, but even among these high-producing farms, bGH might not be a bonanza to some, especially those in hot, humid regions.

"The heat and high humidity in some areas of the South and Southwest lower the amount cows eat and the rate at which they convert feed into milk. Under these heat and humidity stress conditions, milk output gains may not be as readily achieved as in more moderate climates—possibly making the use of the hormone unprofitable for southern farmers," Fallert says.

"Whether bGH would give an advantage to the northern dairy industry remains to be seen. Farmers still might not adopt this technology as readily as we think they will," Fallert says.

The Food and Drug Administration (FDA) hasn't yet approved bGH for general use. Further studies are required by FDA, but the agency will probably approve the use of the hormone within a decade, most likely within 3 years, Fallert says.

Better Fed Animals

Another potential for increased milk production lies in improved nutrition.

Research in animal nutrition has led to the development of isoacids, a generic term for a mixture of four fatty acids. These fatty acids are naturally found in the rumen of cows, but additional amounts can be fed to increase their concentration in the digestive system.

Increasing the concentration of these fatty acids allows more nutrients from a given amount of feed to be available to the cow to produce milk.

"In university studies, isoacids increase feed efficiency and boost milk production 8 to 10 percent. However, under field conditions, a farmer should expect a gain of 3 percent, on average," Fallert says.

One drawback of bGH: A larger amount of feed is needed to sustain cows with increased milk production.

FDA approved isoacids for commercial use in 1984. One company is currently marketing its isoacid product in several states. By the end of this year, the company plans to make the product available throughout the United States and around the world.

Cows and Computers

Efficient milk production isn't only a matter of what you feed, but how you feed it. Computers are now helping dairy farmers feed each animal the right amount to maximize production and minimize costs.

Computers ensure that low-producing cows are not overfed and that high producers have all the nutrition they need for maximum output.

According to Fallert, computerized feeding can result in a 5-percent increase in milk yield per cow, without raising the total feed requirement for the herd.

"There are several types of computerized feeding systems on the market. Costs range from around $12,000 for a unit that can accommodate a herd of about 50 cows to around $60,000 for equipment that can handle 500 animals.

The popularity of computerized feeding equipment is increasing, but once again, the question is whether the farmer can afford the initial investment, Fallert says. □

[Based on information provided by economist Richard Fallert of the National Economics Division, Economic Research Service.]

Too Much Technology?

Consider mountains of dairy products in government storage right now, and the new programs to encourage some dairy farmers to leave the business. Given these conditions, should farmers be planning a future that includes more efficient dairy operations that can produce even more milk?

That is not an easy question, admits economist Richard Fallert.

"Given today's surpluses, many observers would like to see at least a temporary halt to further technological change in the industry. This would allow time for the new dairy programs to help stabilize production, and it might avoid compounding an already difficult situation for many dairy farmers."

However, he isn't sure that such a halt is possible.

"In a free market, technological change doesn't stop just because we're dealing with a surplus. In fact, a surplus and lower milk prices may spur the adoption of new cost-cutting, yield-boosting technologies. The appeal is not necessarily larger production, but rather the ability to reduce the cost of producing each gallon of milk."

Many analysts view agricultural technology as a double-edged sword. Certainly, it has been a key source of strength for the U.S. food system. In 1900, around a third of the population was engaged in farming. Today, less than 3 percent of the population produces a plentiful supply of food, leaving more than 97 percent of the population free to contribute to the economy in other ways. Technology has increased yields and cut unit production costs to the point that Americans spend a smaller share of their income on food than people in any other nation.

Continued technological progress is essential to the long-term competitiveness of U.S. agriculture.

On the other hand, rapid technological change imposes jarring structural and financial adjustments on farmers. Large investments in technology have eroded farmers' margins, yet they are forced to either keep pace or leave the sector. This "technological treadmill" has been a major contributor to the continuing drop in U.S. farm numbers and growth in farm size.

"If the dairy technologies now on the horizon cannot offer greater efficiencies in production, they will be rejected by farmers. But if the technologies allow dairy farmers to produce more milk from fewer animals at a lower overall cost, they will be developed and used," Fallert says.

Does this mean more production on top of current surpluses? In the short run, rapid gains in technology could jeopardize current efforts to deal with surpluses, Fallert says. In the longer run, however, technology doesn't determine the level of production. Market demand, government programs, and price determine how much milk is produced. If fewer farmers are needed to produce all the milk the market and the government are willing to absorb, prices will drop and there will be further adjustments toward a smaller national dairy herd and fewer but larger dairy farms.

"Based on the past 20 years, it seems likely that the farmers still operating dairies by the turn of the century will be those whose cows are the most productive—those who can produce milk at the lowest cost," Fallert says.

Top Export Nations

Brazil, Canada, and Argentina moved up in the rankings, several European nations lost ground, and the United States held onto its wide first-place lead with an 18-percent share of the total value of world agricultural exports.

In brief, that's the picture that emerges from data recently compiled by USDA economist Art Mackie of the Economic Research Service. Mackie examined the latest trade statistics published by the U.N. Food and Agriculture Organization to determine the rankings of the world's major agricultural exporters, each nation's share of exports, and changes in shares and rankings from 1979 to 1984. For purposes of comparison, he consolidated the 6 years of export data into three 2-year averages for 1979-80, 1981-82, and 1983-84.

The United States Is Far Ahead of the Pack, But Some of Our North and South American Neighbors Are Capturing an Increasing Share of World Agricultural Exports

Top 15 exporters[1]	Share of total world agricultural exports[2]		
	1979-80	1981-82	1983-84
	percent		
United States	18.1	18.7	18.0
France	7.7	7.6	7.4
Netherlands	7.0	6.9	6.9
Brazil	3.8	4.0	4.6
West Germany	4.5	4.6	4.5
Canada	2.9	3.5	3.9
Australia	3.7	4.0	3.4
United Kingdom	3.4	3.4	3.2
Argentina	2.5	2.5	2.9
Belgium-Lux.	2.8	2.8	2.7
Italy	2.6	2.6	2.4
Cuba	2.1	2.1	2.4
Denmark	2.3	2.2	2.2
Malaysia	1.8	1.4	1.9
Thailand	1.4	1.8	1.7

[1]Rankings for 1983-84. [2]Based on aggregate value of agricultural exports, measured in U.S. dollars, calculated from trade statistics published by the Food and Agriculture Organization, United Nations. Other data sources may yield slightly different percentages because of different methods of reporting export volume and value.

The United States maintained its firm grip on the number one spot. The U.S. share of world farm trade, by value, was roughly equivalent to the combined shares of the next three largest exporters—France, the Netherlands, and Brazil. The U.S. share climbed from 18.1 to 18.7 percent, and then declined to 18.0 percent in 1983-84. Although the percentage in the last 2-year period was slightly lower than it was in the first, no clear trend can be deduced from the up-and-down pattern, Mackie says.

The overall U.S. predominance among exporters stemmed largely from the big American advantage in three major bulk commodities—wheat, corn, and soybeans. The United States held a 37-39 percent share of the total value of world wheat and flour exports, a 65-72 percent share of world corn exports, and an overwhelming 81-86 percent share of world soybean exports.

Among these three commodities, the closest challenge to the U.S. lead came in the wheat market. Canada captured a 21-percent share of world wheat exports in 1983-84, up from about 17 percent in 1979-80.

Although the U.S. market share for all three commodities dropped slightly in 1983/84, our nearest rival in the overall rankings also registered a decline in market percentage. France saw its aggregate market share decline from 7.7 to 7.6 and finally to 7.4 percent of world farm exports, by value. It held onto the number two position, but several other European nations dropped in the rankings. Among the losers were West Germany, the United Kingdom, Belgium-Luxembourg, and Italy.

With exceptions (wheat and corn from France, for example), some of the toughest competition for market shares seems to be coming from our neighbors to the north and south, rather than from the European Community.

It's worth noting, says Mackie, that four of the world's top 10 agricultural exporters are located right here in the Western Hemisphere—the United States, Brazil, Canada, and Argentina. Except for the United States, all increased their shares of world trade from 1979-80 to 1983-84, and all moved up in the rankings. Brazil moved from fifth place to fourth (bumping West Germany), while Canada moved from eighth to sixth, and Argentina from eleventh place to ninth. The only other nations among the top 15 to increase their shares, or their rankings, were Cuba, Malaysia, and Thailand.

"Given the importance of exports to U.S. agriculture, we have to pay close attention to trends in market shares," Mackie says. However, he does urge some caution in interpreting the data.

"Rankings and shares fluctuate some from year to year, affected by the volume of each nation's exports, the prices for its export products, and ups and downs in overall world trade. Also, because my figures compare each nation's exports in terms of U.S. dollars, some shifts in value shares may partly reflect changes in currency exchange rates vis-a-vis the dollar. For example, the dollar's rise against many European currencies during this period would tend to depress European value shares, simply because any export earnings in francs, marks, or pounds would convert to fewer dollars," he says.

"Given all these variables, we can't automatically assume that the market share trends observed from 1979 to 1984 will necessarily continue in the years ahead." □

[Based on information provided by economist Art Mackie of the International Economics Division, Economic Research Service.]

Top Export States

California emerged as the leading farm export state last year, according to analysts of USDA's Economic Research Service.

"For the first time since we started producing these statistics in 1964, California was number one," says ERS economist Steve Milmoe.

It wasn't any surge in sales that steered the nation's most populous state ahead of Iowa and Illinois, the traditional leaders for the last several years. Rather, California simply lost less (in its export values) than the two Midwestern states.

In fiscal year 1985, California exported some $2.7 billion worth of farm goods, a drop of $87 million from fiscal 1984.

Iowa's export sales, on the other hand, plunged more than $800 million from fiscal 1984 to fiscal 1985. And the value of Illinois' farm exports fell nearly $600 million in the same period. Iowa led the list of exporting states in fiscal years 1981, 1982, and 1984. Illinois was the top export state in fiscal 1983.

"We've seen this coming with the recent major declines in the value of U.S. feed grain and soybean exports, and the composition of exports in states like Iowa and Illinois," Milmoe notes.

Less vulnerable, he says, is California, which derives its export income from a wide variety of commodities.

Milmoe doesn't believe that California has any long-term lock on first place, however.

"The United States has a comparative advantage in producing feed grains and soybeans," he says. "This has been a particularly bad time for these commodities, which should eventually recover and benefit states like Iowa and Illinois."

Farm exports fell for most states as the nation's total farm sales slid from $38 billion in fiscal 1984 to $31.2 billion in fiscal 1985, a drop of 18 percent.

"The most critical factor was the substantial decline in foreign purchases of U.S. wheat and soybeans," says Milmoe. "Overseas demand for these products fell to their lowest levels in nearly a decade."

He cites Kansas and North Dakota as states that felt the "dramatic decline in overseas wheat sales." U.S. wheat exports dropped by one-third to $4.5 billion in fiscal 1985.

Milmoe measures export sales by examining overall production of a particular crop and finding what percentage is contributed by major producing states. Export values are then assigned based on these percentages.

"If additional information exists—such as estimated feed use by state, or port data—it is incorporated into the estimating procedure," says Milmoe.

ERS analysts recently revised some of the methods used to compute the export values of states for fiscal years 1981 to 1985.

"For example, we broke down rice exports into long, medium, and short grain," says Milmoe, "and thereby found that we had underestimated Arkansas' rice exports by 20 percent."

Researchers also reduced the number of states designated as "exporting states" for any given commodity to ensure that exports from states with large surplus production—which are more likely to export—would not be undervalued.

Milmoe says such refinements in the measurement of export values have led to some surprising results.

"In fiscal 1984, live animal and meat data were reviewed and distributed based on shipments by U.S. Customs districts because a large percentage of the live animals were racehorses shipped from Kentucky," says Milmoe. □

[Based primarily on information provided by economist Steve Milmoe of the International Economics Division, Economic Research Service.]

With Major Declines in Export Sales of Iowa and Illinois, California Was Top Export State in Fiscal 1985

Fiscal 1985 export sales, in $ millions

Tough Competition from Thai Cassava

Cassava is a versatile food crop. People in many countries eat the root by frying, boiling, or baking it. Cassava can also be processed into flour, starch, and meal.

American corn producers are accustomed to some competition from Thailand, which produces enough corn to rank among the world's major exporters of coarse grains. Lately, however, Thailand has entered another challenger into the tough competition for corn's markets.

The challenger is a starchy root crop called cassava, also known as manioc or tapioca. Thailand has long been the world's leading cassava exporter, but virtually all of the exports used to go to the European Community (EC) where cassava is mixed into feed rations for swine and poultry.

Large Thai surpluses and EC import limits forced Thailand to widen its sights. Low cassava prices provided a competitive edge.

"Last year, Thai traders launched an aggressive and successful campaign to expand their markets," says economist Sara Schwartz of USDA's Economic Research Service. Altogether, about 1.7 million tons of cassava were shipped to Japan, Portugal, the Soviet Union, Taiwan, South Korea, and North Korea.

All these nations, except North Korea, are regular customers for U.S. corn, and all five customers reduced their imports of U.S. corn last year. In fact, Thailand cassava sales may have displaced up to about 1 million tons of U.S. corn sales, Schwartz estimates. While not a huge drop (U.S. corn exports to all markets totaled 46.3 million tons in fiscal 1985), it was enough to make U.S. farmers take notice.

"U.S. corn producers are very competitive," she says, "and cassava represents one more threat to their share of world grain markets, which are already depressed."

But cassava's impact isn't entirely negative for U.S. farmers, adds Robert Tetro, a trade and marketing analyst with USDA's Foreign Agricultural Service. Soybean meal is needed in feed mixes as a protein supplement to starch-based cassava, and the United States is the world's leading producer of soybeans. A few of last year's cassava customers did increase—albeit slightly—their purchases of U.S. soybeans.

New Competition from an Old Staple

Still, the added competition, Schwartz notes, sent some corn farmers to the libraries, or to the phone, to find out all about this mysterious new rival.

What she tells them, of course, is that cassava is not a new crop. It is a food staple that has been around for 4,000 years; one that provides needed starch to the diets of millions of people in less developed nations. In terms of harvested tonnage, more cassava is grown throughout the world each year than such familiar crops as soybeans and cotton.

Cassava roots are processed into flour, pellets, chips, and starch. Because the cassava plant is made up of about 62 percent water, most of the plant's weight is lost during the drying portion of the production process. According to James Duke, a tropical plants expert with USDA's Agricultural Research Service, a ton of fresh roots yields only about 700-850 pounds of processed cassava.

It is not produced in the United States because it requires a hot and humid growing environment, but around 100 African, Asian, and Latin American countries grow cassava. In 1985, Brazil, Zaire, Indonesia, and Thailand were the world's largest producers.

Unlike Thailand—which earmarks about nine-tenths of its crop for export—most nations consume cassava internally. People in some nations, for example, eat the root directly by steaming, roasting, or boiling it. In other countries, it is used to make bread dough, fried as a kind of "potato chip," and used as flour for other baking needs.

For food uses, its natural competitors tend to be wheat and rice. During the 1970's, in fact, cassava demand declined because larger world production of food grains, particularly wheat, was accompanied by rising incomes and the desire for more varied, convenient foods in less developed nations.

Despite this challenge to its traditional domestic uses, only about 13 million tons of processed cassava products (equivalent to about 35-40 million tons, fresh root weight) were exported in 1985 out of nearly 136 million tons of world fresh root production.

Many industrialized nations regularly buy small quantities. Even the United States imports 30,000-50,000 tons of cassava a year, primarily for use as a starch in industrial glues. Some cassava also comes into Hawaii for use as a feed mix ingredient.

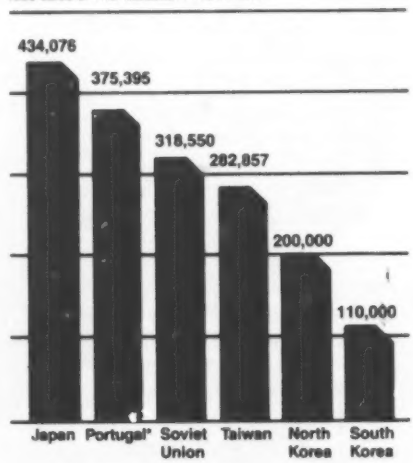
Recently, however, cassava has gained importance as a feed mix ingredient in the EC where it competes with both grain and nongrain feeds.

EC Limits and Thai Surpluses

Cassava is classified as a "nongrain feed" import by the EC and allowed to enter under a minimal tariff. According to Schwartz, that classification makes cassava a less expensive alternative to imported and domestic EC feed grains.

She reports that Thai exports to the EC rose from a mere 340,000 tons in 1967 to about 6 million tons in 1978. Then, the EC moved to put a cap on cassava because rising imports were providing too much competition for the EC's own growing feed grains production.

The U.S. Lost Some Corn Sales When Six Markets Outside the EC Took 1.7 Million Tons of Cassava



*Portugal became a member of the EC this year.

Source: Thailand Board of Trade.

Under pressure, Thailand agreed to limit future exports to the EC. A series of limits led to flexible export quotas in 1982. Under this arrangement, Thai traders were allowed to ship a total of 10.5 million tons during the two-year period 1983-84 and a total of 10 million tons in 1985-86. To meet these benchmark quotas, Thailand had to reduce its EC exports to about 4.7 million tons in 1985, down from 5.7 million in 1984.

Thailand knew it had a marketing problem. Cassava is Thailand's second leading agricultural export earner behind rice, and it provides income for the nation's poorest farming region. Moreover, cassava production had been rising and surpluses had been mounting since 1983.

Thailand's response to the EC quotas was largely responsible for the surpluses. To protect its farmers from falling prices when quotas were implemented, the Thai government adopted a policy that encouraged exporters to accumulate stocks. Meanwhile, farmers were urged to diversify into other crops.

Instead, the high cassava prices provided the incentive for farmers to produce more, and cassava production reached about 22 million tons (roughly 7 million tons on a processed basis) in 1985. Coupled with 1.5 million tons of carryover stocks, the exportable surplus amounted to around 8.5 million tons.

With only slightly over 6 million tons of sales lined up, cassava's export price plunged from an average of $105 per ton in 1984 to a low of $38 a ton by early 1985. Thailand turned the price decline to its advantage. Thai traders marketed cassava internationally as an inexpensive and versatile commodity. As a result, its cassva sales to Japan, Taiwan, Portugal, the Soviet Union, North Korea, and South Korea reached 1.7 million tons, up from 445,000 in 1984. According to Schwartz, the cassava probably replaced around 1 million tons of corn, much of which would likely have been supplied by U.S. farmers.

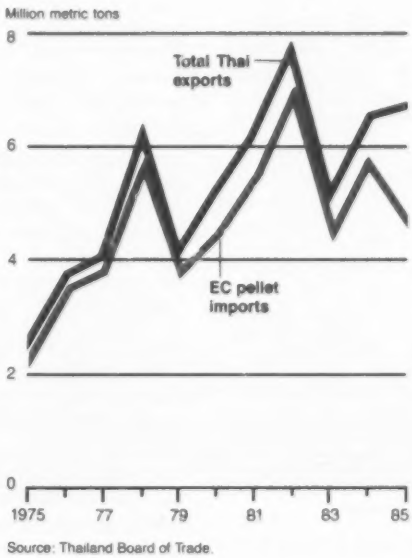
Permanent New Markets?

Schwartz predicts that competition from cassava will continue. In response to low prices, Thailand cut back its production to an estimated 17 million tons this year—a 26-percent decline from 1985. On the other hand, the country still has some cassava stocks left over from last year.

Moreover, prices have recovered and Thai farmers who are now making planting decisions for 1987's crop are expected to increase production—perhaps substantially. Prices may drop again, but Schwartz notes that many Thai farmers can make a profit on cassava priced as low as $20 a ton.

According to the economist, the Thai government's land diversification program has not been as effective as originally hoped.

Until Last Year, About 85% of Thailand's Cassava Exports Went to the EC



Source: Thailand Board of Trade.

Some farmers have shifted to the planting of alternative crops such as corn and kenaf (used in the making of rope and canvas). But high cassava prices and low production costs are keeping many producers from enrolling in the program.

Another factor that could influence Thai cassava production and competition is the annual EC import quota. The EC has proposed to limit imports of Thai cassava to about 5.5 million tons per year for 1987-91. Thailand, however, is pushing for a higher limit.

The U.S. Food Security Act of 1985 (the official title of the new farm bill) may also have an impact on cassava's ability to further penetrate corn's markets. Lower loan rates and more competitive corn prices may reduce cassava's advantage. It may also keep Thai producers from shifting from cassava production to corn production.

Cassava production is strongly influenced by price, Schwartz explains. When prices are high, Thailand produces more cassava, and U.S. corn growers are faced with increased competition for their markets. If production rises in 1987, as expected, Thailand may again be looking to expand its markets.

"Thailand's marketing approach of 'try cassava, you will like it' has been successful," she says. "It paid off in increasing the world's awareness of cassava, and more countries may consider cassava as a feed mix ingredient in the future if the price is right and the supply is available." □

[Based on information supplied largely by economist Sara Schwartz of the International Economics Division, Economic Research Service.]

AGRICULTURAL ROUNDUP

Today, at least one person in about half the nation's farm families has an off-farm job. In 1960, only a third of farm families had someone working off the farm.

Gearing Up for GATT

U.S. trade officials are looking forward to the fall season.

That's when they're hoping to meet with other major trading nations to discuss the rules governing global trade—and U.S. complaints that some countries compete by unfairly subsidizing their exports.

The setting will be Geneva, Switzerland, where representatives of the United States will convene with other members of the General Agreement on Tariffs and Trade (GATT). There are 90 countries which belong to GATT and another 30 nations which generally observe its provisions. Together they account for about four-fifths of world trade.

"High on the U.S. agenda, certainly, will be an effort to tighten the GATT rules regarding export subsidies for agricultural products," says Edward Wilson, a trade analyst with USDA's Economic Research Service.

The GATT subsidies code currently states that countries cannot use such subsidies to capture "more than an equitable share" of the market. But American officials, who have watched U.S. farm exports fall sharply in recent years, claim that the code hasn't prevented abuses.

"The European Community, for example, has used agricultural export subsidies to help its high-cost producers compete on world markets," says Wilson.

The concerns of other agricultural producers may also be voiced in the upcoming GATT deliberations. "For example, developing country exports are often heavily agricultural. U.S. officials must recognize that developing countries need to export their farm products in order to pay back much of their debt."

As a result, their negotiators tend to focus on protectionist measures in industrialized nations, including the United States.

"We have to balance gaining more access to foreign markets with a willingness to open our markets, including agricultural ones, to more competition," says Wilson.

GATT discussions are also expected to include a look at how the organization enforces its rules.

"The United States would like to see agricultural export subsidies come under new and more effective discipline under GATT," says Wilson. "Even when GATT finds a member nation isn't trading by the rules, the dispute settlement process can be a frustrating one. It takes a long time to decide a case, and a number of GATT decisions have been rendered largely ineffective because nations that lose disputes often block adoption of GATT panel conclusions."

He notes that the GATT Council, which oversees the organization, cannot adopt a recommendation from a panel "by consensus" if one member—the "loser," for example—objects.

Another priority for the United States is expanding GATT rules to include the burgeoning field of services, particularly computer and financial services.

"These are trade areas in which U.S. technology has given us an edge," says Wilson. "Unfortunately, these services are often subject to tighter restrictions than imports of physical commodities."

The major objections to including negotiations over services in the next GATT round have been raised by developing nations which want to shield their young service industries and develop local expertise.

U.S. officials aren't going to the GATT talks with the idea that the negotiations can be a cure-all.

"GATT is largely a trade mechanism," says Wilson. "It won't necessarily improve all aspects of our competitiveness, which is affected by many factors, including the value of the dollar."

On the other hand, he says, "a lower cost dollar won't result in greater U.S. exports if world market access is restricted."

Off-Farm Work for Long-Term Survival

Farm families may have once looked at off-farm employment as a transition to full-time farming or as a step toward leaving farming altogether for retirement or other reasons.

But that perception has probably changed for good, say economists Priscilla Salant of USDA's Economic Research Service and William Saupe of the University of Wisconsin Cooperative Extension Service.

Now, they say, such employment is often viewed as part of a long-term farm survival strategy—a "farm management strategy" involving the best uses of family labor on and off the farm.

In fact, at least one person in about half (45 percent) of the nation's farm families have jobs away from the farm, say the two economists. In 1960, only a third of farm families had someone working off the farm.

The economists based their findings on a survey of Wisconsin farmers, but add that "this is consistent with a long-term, national increase in the number of farm families that combine farm and off-farm work."

Salant says the Wisconsin survey disclosed that "someone worked off the farm in 1982 on half the dairy farms and two-thirds of the non-dairy farms. The hours and weeks of off-farm work were substantial and on average accounted for over $4,000 income per year on dairy farms and about $13,000 on the other farms. Health insurance was the most common fringe benefit received from the off-farm job."

She adds that "on average, dairy farms were smaller, but no less efficient, when the operator worked off the farm. Only about one-third of the dairy farmers and 15 percent of the other farmers who were working off-farm planned to become full-time farmers."

Now that off-farm employment appears to be a regular part of many farmers' work, new questions have emerged.

"How does off-farm work fit into the long-term management plans of farm families?" asks Saupe.

He says the answers may be different for each family, but the basic issue is finding the most profitable strategy.

For example, Saupe says, "while it may be profitable to raise dairy steers to slaughter weight on the farm, it may be more profitable to instead use the feed, labor, and building space to raise replacement heifers."

According to Saupe, "the strategy of someone in the farm family taking an off-farm job can be evaluated in the same framework. First, determine what economic gain and other benefits would be realized from the off-farm work. Second, ask whether the off-farm job is the best alternative available for reaching family goals, given the resources that are available."

Saupe advises that economic gains, benefits, and costs can be estimated by thinking through a number of steps.

"For instance, analyze any marketable skills and abilities. These might come from farming experience in buying and selling, operating and repairing machinery, carpentry, and crop scouting, or from homemaking skills of child care, sewing, and farm accounting. Perhaps there are vocational skills as well such as typing, office management, and welding."

The farmer must also consider such things as transportation costs, fringe benefits, and the security of any off-farm employment—weighing these factors against the gains of spending the same hours on the farm.

FARMLINE TRENDS

Top Farm States

		1st	2nd	3rd	4th	5th	6th	7th	8th
Number of farms, June 1985 (U.S. total: 2.3 million)	farms	Texas 184,000	Missouri 115,000	Iowa 111,000	Kentucky 100,000	Tennessee 98,000	Minnesota 96,000	Illinois 90,000	Ohio 89,000
Land in farms, June 1985 (U.S. total: 1.02 billion acres)	million acres	Texas 136.3	Montana 60.9	Kansas 48.0	Nebraska 47.2	New Mexico 45.0	So. Dakota 44.5	No. Dakota 40.9	Arizona 37.5
Average farm size, June 1985 (U.S. average: 445 acres)	acres	Arizona 4,412	Wyoming 3,987	Nevada 3,520	New Mexico 3,361	Montana 2,280	Alaska 2,295	Colorado 1,288	No. Dakota 1,203
Acres planted to principal crops, 1985 (U.S. total: 342 million)	million acres	Iowa 26.0	Illinois 23.7	Texas 22.6	Kansas 22.1	Minnesota 21.5	No. Dakota 21.5	Nebraska 18.9	So. Dakota 16.1
Number of cattle and calves on farms, January 1986 (U.S. total: 105 million)	million head	Texas 13.60	Kansas* 5.90	Nebraska* 5.80	Oklahoma 5.20	California 5.00	Iowa 4.95	Missouri 4.80	Wisconsin 4.20
Number of hogs and pigs on farms, December 1985 (U.S. total: 52.3 million)	million head	Iowa 13.50	Illinois 5.40	Indiana 4.15	Minnesota 4.10	Nebraska 3.90	Missouri 3.85	No. Carolina 2.35	Ohio 1.98
Cash receipts from crop marketings, 1985** (U.S. total: $73.9 billion)	million dollars	California 9,648	Illinois 5,379	Iowa 5,018	Texas 3,677	Minnesota 3,786	Florida 3,364	Nebraska 3,345	Indiana 2,921
Cash receipts from livestock marketings, 1985** (U.S. total: $69.6 billion)	million dollars	Texas 5,438	Iowa 4,591	Nebraska 4,573	California 4,223	Wisconsin 3,982	Kansas 3,557	Minnesota 3,282	Illinois 2,178
Net cash income from farming, 1984 (U.S. total: $39.2 billion)	million dollars	California 3,769	Iowa 2,911	Texas 2,246	Florida 2,078	Nebraska 1,936	Wisconsin 1,760	Minnesota 1,725	Illinois 1,549
Government payments, 1984 (U.S. total: $8.4 billion)	million dollars	Texas 782	Iowa 743	Illinois 543	Nebraska 533	Minnesota 530	No. Dakota 463	California 335	Oklahoma 309
Farm production expenses, 1984 (U.S. total: $139.5 billion)	billion dollars	California 12.11	Texas 9.93	Iowa 9.10	Illinois 7.20	Nebraska 6.65	Minnesota 6.50	Kansas 6.11	Wisconsin 4.90
Average farm debt-to-asset ratio, 1984	percent	Nebraska 32.0	Iowa 30.5	So. Dakota 30.0	Minnesota 29.5	Georgia 28.5	Wisconsin 27.4	Delaware 26.8	Kansas 26.0

*Kansas and Nebraska tied. **Includes net CCC loans.

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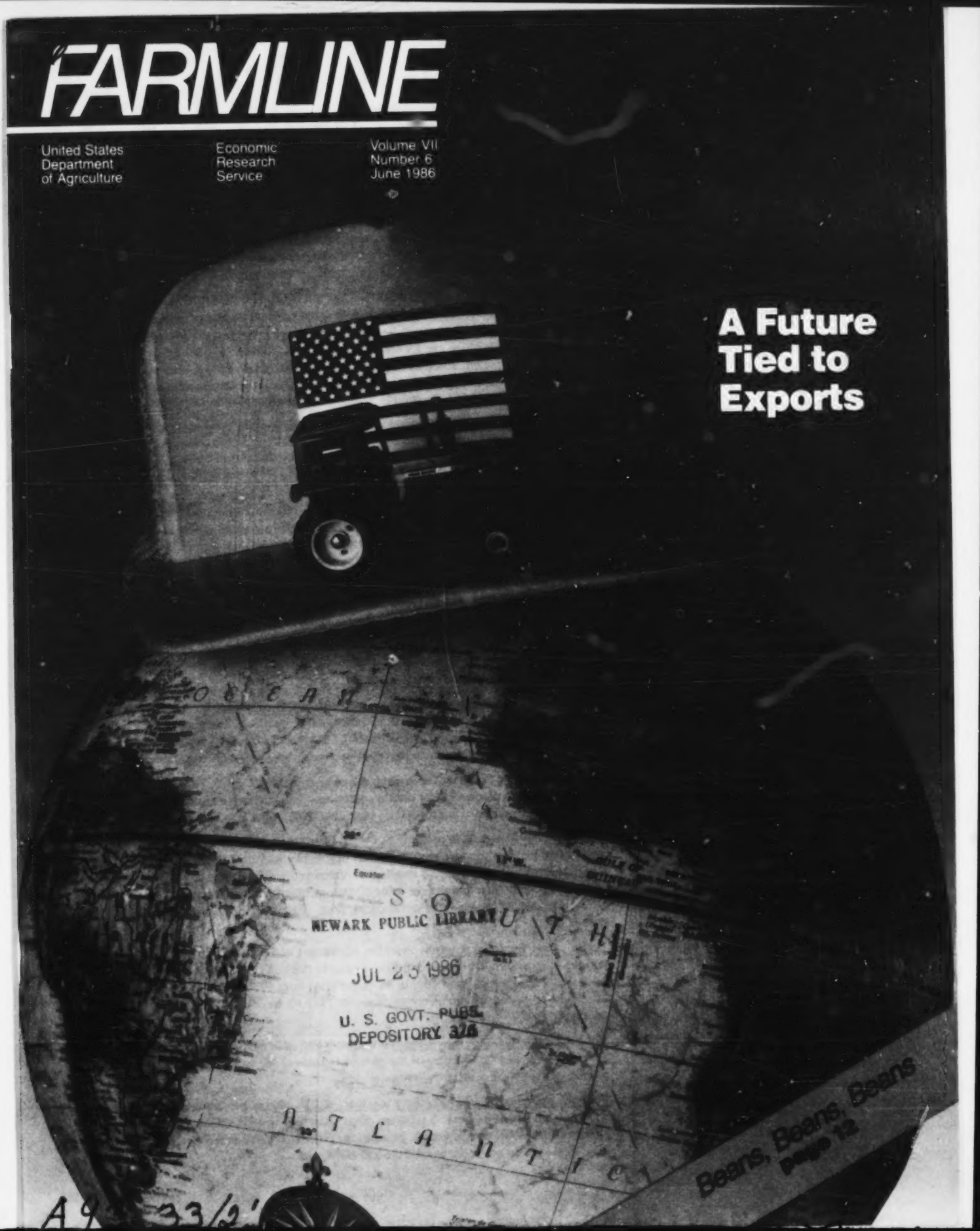

A Future Tied to Exports

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PERSPECTIVES

THE NEW COTTON PROGRAM, which takes effect August 1, is complicated, but the major objectives are straightforward: to make U.S. prices competitive in international markets and to support the income of cotton growers during the transition to a more market-oriented economy. How will this be accomplished? By effectively weakening the basic loan rate as a price floor, freezing target prices for 1986/87, and then lowering the targets gradually, according to USDA economist Sam Evans of the Economic Research Service.

One unique feature of the 1985 farm bill, Evans says, is that it allows cotton producers to repay their loans at a lower level if the adjusted world price is below the announced loan rate. For example, the 1986/87 loan rate for the base quality U.S. cotton (SLM 1-1/16-inch) at an average location is 55¢ a pound. The loan repayment rate for that quality is 44¢. This would allow U.S. prices to follow world market prices more closely and minimize the amount of cotton stored under the loan program.

After 1986/87, loan rates will be figured by equations. For 1987-90, the loan rate will be the smaller of:

- 85% of the weighted average spot market price during the preceding 5 marketing years, excluding the high and low years; or
- 90% of the average of the five lowest price quotes for Middling 1-3/32-inch cotton, c.i.f. northern Europe, during the 15-week period beginning July 1 of the year in which the loan is to be announced. The average is to be adjusted downward by the average difference during April 15-October 15 between the northern European prices and U.S. spot market prices of the base U.S. quality.

The loan rate for the 1987-90 crops may not be reduced more than 5% from the rate for the preceding crop, and the minimum loan rate is 50¢ per pound.

As far as loan repayments: If the world price of cotton (as determined by the Secretary and adjusted for U.S. quality and location) is below the loan rate, the Secretary must implement one of the following two plans:

- Plan A: Producers are permitted to repay loans at a level determined and announced at the same time the loan rate for the crop is announced. The repayment level cannot be less than 80% of the loan rate and, once announced, cannot be changed during the season. This plan was selected for the 1986 crop.
- Plan B: Under this plan, the minimum loan repayment rate for the 1987-90 crops would be the prevailing world price. Under certain conditions, the loan repayment rate may be set above the prevailing world price,but may be no more than 80% of the loan rate.

If the selected plan fails to make U.S. cotton fully competitive in world markets, and the world price is below the loan repayment rate, negotiable marketing certificates must be issued. Certificates will be issued to first handlers of cotton and will be valued so as to make cotton available at competitive prices. The value of each certificate is based on the difference between the loan repayment level and the world cotton price. The certificates are redeemable only for cotton.

Target prices for upland cotton under the Agriculture and Food Act of 1981 and subsequent legislation rose from 71¢ a pound in 1982 to 81¢ in 1984 and 1985. In contrast, the 1985 act allows for a total reduction of 10% in the target price from 1986 to 1990. The target price for 1986 is 81¢ a pound; minimum target prices for 1987-90 are 79.4¢, 77¢, 74.5¢, and 72.9¢, respectively.

The deficiency payment rate is figured the same way as in the past. It's the difference between the target price and the loan rate or the difference between the target price and the national average market price, whichever is higher.

For each year during 1986-90, there is a limit of $50,000 per person on the sum of deficiency and diversion payments from all program crops, including in-kind and certificate payments. However, loan deficiency payments, equal to the difference between the loan rate and the loan repayment rate, do not count against the $50,000 limit.

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Americans eat more than a dozen different types of beans, but they don't eat as many as they used to. The main reasons for the decline in bean consumption are rising disposable incomes and changing lifestyles. Economist Neilson C. Conklin takes a look at the industry.

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A Future Tied to Exports

What does the future hold for U.S. agriculture? The answer depends, in large part, on how much and how fast export markets expand, according to the following article, which is adapted from a speech by senior economist Clark Edwards of USDA's Economic Research Service. For the last 2 years, Edwards directed a wide-ranging economic research project on the productive capacity of U.S. agriculture and the prospective demand for that capacity to the year 2000. In comments below, he discusses the potential for renewed growth in exports, as well as the pitfalls of dependence on foreign markets. He also offers a brief historical perspective on U.S. agricultural trade in the accompanying sidebar box.

The volume of U.S. agricultural exports increased an average of 8 percent per year during the 1970's. So far during the 1980's, export volume has declined in each consecutive year, and USDA trade analysts forecast another drop this year.

But the forecasts also seem to say that the worst may soon be over.

The foreign exchange value of the dollar has been dropping against many major currencies, and our commodity prices are closer to market-clearing levels. Farmers' production costs are stabilizing, and rates of return on investment in agriculture are recovering from reduced levels for many farm enterprises.

The longrun trend in export growth over the past three decades averaged about 3 percent per year. If we can manage to get back on that track—and it appears that we can—agriculture's recovery will be hastened.

Prospective growth in the physical capacity of the U.S. farm sector seems adequate in coming years to meet domestic demand growth, plus export growth of about 3 percent per year, even if farmers are faced with moderately declining real (inflation-adjusted) prices for their products. Of course, this assumes that efforts will continue to conserve and develop our natural resources, discover new technologies, promote efficient regional relocations of production, and provide the necessary farm inputs.

Temporary strains are anticipated in the future—as we have seen them in the past—but these need not lead to prolonged periods of either surplus or shortage.

Income shifts will continue to occur within the farm sector, as well as among farmers, input suppliers, post-harvest handlers, domestic consumers, and foreign trading partners. The income shifts will favor first one group, then another. Policies for the late 1980's and beyond need to be flexible if we want to avoid windfall gains to some groups and severe losses to others—and if we want to be able to deal with economic reversals as they arise. Again, with these goals in mind, we need to find ways to share the farmer's risk, while at the same time maintaining agriculture's resilience.

Risks Versus Benefits

The recovery of lost export markets would, however, make agriculture more dependent on foreign markets than it already is and make it more vulnerable to future price swings of foreign origin. By the year 2000, around half of U.S. harvested cropland could be producing for export markets, up from an average of 36 percent in the last 5 years. The livestock sector could also become more involved in exports, reducing its insulation from foreign market swings.

Given the risks implicit in dependence on volatile world demand, why would we welcome a resumption in export growth? Perhaps because the alternatives are less appealing.

One alternative is to have a much smaller agriculture limited to expansion in domestic markets. These markets grow about 1 percent per year. With resource productivity increases that have been averaging about 1.9 percent per year, this would imply a steadily shrinking agriculture. Each year, less land, less labor, less capital, and fewer farms would be needed to stay in line with domestic demand growth.

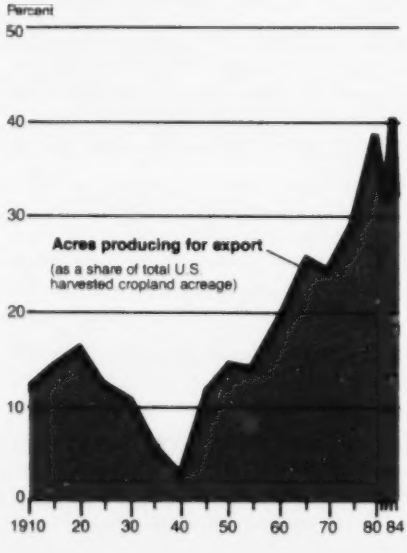
The potential for demand growth outside the United States is much greater. World population is expected to double before the middle of the next century, and the food will have to come from somewhere.

The United States has the capacity to supply a share of these needs. An increase in exports to the longrun trend of 3 percent per year would double our exports in less than three decades and provide a basis for growth sufficient to absorb the likely increases in agricultural capacity.

During the last population doubling, food supplies more than doubled, and the world trend in relative food prices was slightly, if erratically, downward. We can expect this again with the next doubling. Real prices of food products in world markets will probably decline moderately over the next three decades. This reflects the moderate-growth demand scenario as well as the interaction of cost-reducing technologies and the historical tendency of farmers to increase their output until price falls below unit cost.

Production increases can be expected even if prices received for farm products fall moderately further relative to prices paid for production inputs. After all, farmers are used to that. The parity ratio is now about half what it was 70 years ago, yet agriculture has

More Than One Cropland Acre In Three Is Now Producing for the Export Market



been able to increase its efficiency, expand, and prosper in intervening years. With prospects for continued technological and structural changes in agriculture, the sector can continue to adapt and grow despite lower real prices received by farmers—assuming that the markets, particularly the export markets, expand sufficiently.

A Bumpy Road

The size of markets for U.S. exports depends on the growth in world population, gains in per capita world income and wealth, changes in world food production, factors affecting the international monetary system and international debt, the price competitiveness of U.S. products, and the vagaries of foreign government policies with respect to food imports and exports.

A resurgence in export demand could result from a change in one or more of these factors: an acceleration in world population or income, a setback in the expansion of world food production, a less expensive dollar, and government policies and institutional arrangements undertaken either by the United States or by others that boost exports through changes in support programs, monetary policy, tax laws, quotas, embargoes, subsidies, promotions, or aid.

Several of these factors have worked against U.S. farmers so far during the 1980's, but prospects are for improvement in coming years.

However, even if the situation does improve and we seem to be getting back on the 3-percent trend for export growth, we have no reason to expect the future to be one of stable and steady growth. The past has been bumpy—except for the unusual stability of the 1950's and 1960's when farmers were protected by massive and expensive price and income support programs. The future can be expected to be bumpy, too.

Farmers have the flexibility and resiliency to make most of the adjustments needed to cope with future changes; however, when volatility becomes extreme, farmers may need protective intervention by government.

An export-oriented agriculture is not consistent with long-term programs designed to protect a depressed agriculture in a closed and isolated society. Instead, it requires programs to cushion an efficient and growing agriculture which is linked to volatile world markets in an open and international economy. □

Exports: A Changing History

During World War I, an increase in exports expanded U.S. agricultural production and improved incomes. By the early 1920's, nearly 1 harvested cropland acre out of every 5 was producing for export. Most of the exports were for nonfood uses—cotton, tobacco, tallow, and hides.

During the 1920's and 1930's, these markets closed, and agriculture became depressed. By the end of the 1930's, the United States exported almost no agricultural products.

Following the buildup for World War II, exports grew steadily until, by the 1960's, 1 acre in 5 was again producing for foreign markets. The mix had shifted away from industrial uses to food, mostly wheat. The expansion was supported by food aid programs but was slowed by massive U.S. farm price and income support programs, which stabilized domestic prices at levels generally above world prices.

During the 1970's, U.S. exports became competitive because our prices were close to world market levels and the dollar had become relatively less expensive. A growing world population with increasing income per capita was coupled with slowed growth in world food supplies. In addition, some countries, such as the USSR, decided to upgrade diets by importing more feed crops to support their livestock sectors.

Subsequent growth, which averaged an unsustainable 8 percent per year for the decade, shifted the export commodity emphasis to cash markets for livestock feed, especially corn and soybeans. This was a pleasant period for agriculture because it was characterized by expanding output and increasing prices received by U.S. farmers. Concern was even expressed that we couldn't keep up that pace of growth for long; that we might reach the limits of our agricultural capacity.

The end came not from an internal limit to capacity, but from a downturn in export sales. Worldwide depression hit countries that imported from us. Others reduced imports because of large debts at high interest rates; they no longer had the foreign exchange needed to purchase imports. At the same time, the growth in world food supplies accelerated, and the value of the dollar climbed in international currency markets, making U.S. products relatively more expensive for importers. The quantities shipped by the United States fell and prices declined. Total export receipts have dropped sharply since 1980.

Farmers are accustomed to uncertainty in weather, prices, and institutional arrangements in their economic environment. However, the greatest volatility during the 1970's and early 1980's was the result of fluctuations in the export markets on which farmers had grown very dependent.

U.S. agriculture is now solidly linked to the world economy. Through that linkage, social, political, economic, and natural events elsewhere in the world influence domestic farm prices, incomes, and production. The benefits of expanding markets for our farm products are clear, but continued reliance on exports is accompanied by some risks. We have become dependent on volatile export markets.

Can Lower Loan Rates Counter Subsidies, Stimulate Exports?

How can lower loan rates help U.S. agriculture compete for export markets if our competitors continue to subsidize their own producers?

The answer, say many economists, is that lower loan rates will help discourage these subsidies.

To follow their line of reasoning, you have to recognize that U.S. loan rates have an impact far beyond the domestic market. U.S. loan rates set a price floor that can reduce the subsidy burden on many foreign competitors, allowing them to undercut our prices at a relatively low cost—a cost they can afford. In recent years, the price floor provided by our loan rates has been high enough to give even many of the less efficient agricultural producers abroad an incentive to increase production.

The U.S. government was, in effect, accepting part of the cost of these foreign subsidies, according to economist Keith Collins of USDA's Economic Research Service. Foreign governments could subsidize with the assurance that their budget exposure would be limited by U.S. actions. The U.S. government would step into the market, buying up its farmers' surpluses whenever prices fell to loan rates.

The more that foreign production cut into U.S. sales, the greater the surpluses accumulated by the United States. This policy partly shielded foreign producers from the price consequences of their own rising output.

Our policies have partly shielded foreign producers from the price consequences of their own rising output.

No More Guarantee

So what happens if we continue to lower the "guaranteed" price floor, allowing our prices to adjust to market demand? To the extent that foreign producers have higher costs of production and are less efficient than our farmers—and that is often the case—we can make these subsidies very expensive to our competitors, Collins says.

To maintain the production incentive, foreign subsidies must rise as world market prices fall. Once it becomes evident that the United States won't price itself out of the market—or buy up the world's surpluses to support prices—other producing nations will recognize that they'll have to share the consequences of larger production.

The assumption is that many of these subsidies will become so expensive—so unaffordable—that the United States is likely to face less competition for markets in the long run.

This is one of the assumptions implicit in the 1985 farm bill. Although its validity can only be tested with time, there has already been at least one positive response, says Collins. "Canada recently announced substantial reductions from 1985 in the initial prices it will pay its farmers for 1986 wheat and barley. The Canadians could have chosen to keep prices up, but did not."

Another promising sign: recent declines in the value of the U.S. dollar on international currency markets. These declines make it all the more likely that the new price support policies will succeed in stimulating sales of many American commodities. The lower valued dollar makes our exports more competitive and less expensive for foreign buyers whose currencies have appreciated against the dollar. Similarly, it lowers the farm prices facing producers in those competing countries whose currencies have appreciated.

Potential Drawbacks

But there are potential risks to a more aggressive U.S. export poli[cy], especially in the short term, adds Collins. [Nations] may be tempted to respond by [retreating] into protectionism or by threatening trade wars. There are also costs to American agriculture in maintaining a competitive edge in a more open world market—costs in terms of resource adjustments, risks of wider price swings, and so on.

In addition, Collins points to the potential for mixed signals that may come from U.S. acreage reduction programs. These programs, he says, have represented an American commitment to eliminate surpluses and raise prices by restricting U.S. production. The future possibility of higher prices and the promise that the United States won't unleash its full production capacity whenever surpluses start rising may weaken efforts to induce our competitors to curtail their own excess production capacity.

The willingness of the United States to continue to pay for acreage reduction programs and for the maintenance of any surplus stocks may bring the issue of foreign subsidies down to the question of "who's got the deepest pockets," says Collins.

Finally, there is uncertainty related to the reaction of importing nations. As a group, these nations have shown considerable growth in self-sufficiency over the last decade. One motive was to protect themselves from sharp, periodic price increases for imported commodities, even though U.S. loan rates provided some price stability to the market. Lower loan rates mean a "greater opportunity for price instability," Collins explains. This may encourage some importing nations to continue their efforts to reduce dependence on world markets.

"We don't know the final outcome of our new, market-oriented farm policies, and I don't expect to see most of our export competitors actually cutting back on production," says Collins. "What I do expect, however, is a slower rate of expansion in foreign production by both importers and major exporters."

In his view, the more competitive stance puts the United States in a position to take advantage of renewed growth in world demand, when it comes. "In essence, our ability to expand production greatly, at low cost, sets us up to be the major beneficiary of future increases in global trade," he contends. □

[Based on information provided by economist Keith Collins of the National Economics Division, Economic Research Service.]

REPORTS IN THE NEWS

All About the Farm Sector

The U.S. farm sector is changing, but not as quickly as some figures suggest. Agricultural census statistics for 1974 and 1982, for example, do show a 143-percent increase in the number of farms with annual sales of $250,000 and up. More than half the increase, however, can be explained solely by inflationary increases in commodity prices over that period.

Similarly, the evidence that farm production is rapidly becoming more and more concentrated among a few very large farms has been exaggerated. The top 10 percent of farms producing corn accounted for 37 percent of production in 1982, down from 42 percent in 1974. Only in orchard crops, vegetables, beef cows, and hogs did the largest farms seem to be gaining market shares.

This report examines farm operator income and wealth, ownership and control, business organization, and concentration of production for different size farms in the mid-1980's. It also discusses changes during the last decade and provides comparative statistical profiles of U.S. farms by sales class, location, and commodity. Among the highlights:

- Half of U.S. farmland in 1982 was owned by individuals, partnerships, or corporations whose primary occupation was farming. Another 14 percent was owned by farm operators whose principal occupation was something other than farming, and the remaining 36 percent of U.S. farmland was owned by nonfarmers. The largest 5 percent of the owners held 53 percent of U.S. farmland.

- Off-farm income is now the primary source of farm sector income, having increased from 43 percent of total income in 1960 to 60 percent in 1983. Off-farm income contributes only a small proportion (4-5 percent) of total operator family income on very large farms, but provides virtually all the family income on small farms.

- More than 1 million U.S. farms — 49 percent of the nation's total — are classified as "rural residences" by the authors. These farms have annual sales of less than $10,000 and, on average, they show negative net farm incomes. Their off-farm incomes, however, averaged more than $20,000 per operator family in 1983. Altogether, these units account for less than 3 percent of U.S. farm production, and the farming activity is frequently an avocation or hobby.

The U.S. Farm Sector in the Mid-1980's *by Donn Reimund, Nora Brooks, and Paul Velde. (Published May 1986; 46 pages; GPO Stock No. 001-019-00441-0; $2.50.)*

All About the Food System

Sales in the U.S. food marketing system reached an estimated half-trillion dollars in 1985, an inflation-adjusted increase of 3.5 percent from 1984.

This report analyzes and assesses the structure, recent developments, and the outlook for the food marketing system, with individual sections on food manufacturing, wholesaling, retailing, and food service. Specific findings include:

- Food industry acquisitions and mergers increased during the 1980's, with such transactions averaging 607 per year, compared with 474 annually during 1975-79.

- The number of U.S. food manufacturing firms continues to decline. There were 40,000 firms in 1947, 20,616 in 1977, and an estimated 16,600 in 1982.

- Supermarkets constituted 14 percent of all grocery stores in 1982 but captured 76 percent of all grocery store sales.

- The share of the food dollar allocated to food prepared and eaten at home fell from 73 percent in 1960 to 58 percent in 1984. The trend of eating outside the home will result in continued employment growth among food and beverage preparation and service occupations. About 2.1 million or 8 percent of the 25.6 million new jobs that the U.S. economy is expected to generate during 1982-95 should occur in food service, according to government projections.

Food Marketing Review, 1985. *(Published March 1986; 53 pages of text and data; GPO Stock No. 001-019-00455-0; $3.00)*

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AGRICULTURAL ROUNDUP

Diminishing Role for Black Farmers

The long-term decline in the number of U.S. farms looks relatively modest compared with the downward slide in farms operated by black Americans.

Between 1920 and 1982, the number of U.S. farms declined by 65 percent. During the same period, the number operated by black farmers dropped 96 percent, from 926,000 to around 33,000.

This diminishing role for blacks in agriculture—from one out of every seven farmers to nearly one out of seventy—shows no signs of letting up, according to USDA demographer Vera Banks of the Economic Research Service.

In fact, Banks and other analysts point to several reasons why the trend will probably continue into the foreseeable future. These reasons include the incidence of poverty among black farm families, the continuing lure of higher income jobs far away from the farm, and the older average age of today's black farmer.

Although there are exceptions, the majority of black farmers do not receive enough farm income to support a family at an acceptable standard of living, according to Banks. In 1982, nearly half the nation's black farmers rang up agricultural product sales of less than $2,500 for the entire year—and that's earnings *before* expenses. Only 20 percent reported annual sales of more than $10,000, compared with 50 percent of farms throughout the country.

Nearly all American families with farms in the lower sales classes depend heavily on off-farm jobs to help pay living expenses. Often, these off-farm jobs provide enough income to support a comfortable standard of living—enough, even, to help capitalize expansion of the farming operation to the point where it can be self-sustaining.

However, that does not appear to be the case for the majority of black farm families.

A trio of other ERS researchers, Robert Hoppe, Herman Bluestone, and Virginia Getz, looked at the larger context in which black farmers operate.

Their conclusions: "Most black farm families have failed to prosper mainly for two reasons. First, they have less education and capital than other farmers. Second, black farmers are concentrated in those rural Southern counties that have not fully shared in the nation's economic growth and development." These conditions make it difficult for low-income black farm families to earn much in agriculture or to find well-paying off-farm jobs in their communities. On average, the Southern black farm family earned $10,600 in off-farm income in 1979, while the typical Southern farm family garnered $16,400 from off-farm employment.

Largely because of these conditions, the children of black farmers have had a strong economic incentive to leave home, once they're able, for higher paying jobs in other areas. The rejection of a future in agriculture by sons and daughters has had a big impact on blacks in farming, affecting not only their number, but also the age of those who remain.

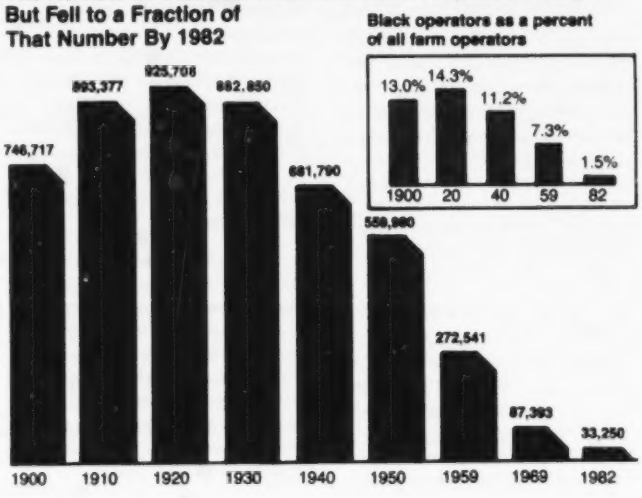
"The average black farmer is about 58 years old, 7 years older than the average white farmer," says Banks.

"Before World War II," she continues, "black farmers were somewhat younger, on average, than white farmers. Since that time, the average age of black farmers has risen because so many young blacks have chosen not to enter the business. The high proportion of older farmers among blacks means that a further substantial decline in their numbers will occur unless many young blacks decide to enter farming."

Is that likely to happen? Banks and her colleagues say it certainly isn't expected to happen anytime soon. It would probably take more than ensuring that black farmers have equal access to credit and extension programs. It might require programs tailored specifically to low-income black farmers, the sizes and types of farms they operate, and the regional pockets of poverty where many of them live.

"The economic outlook for black farmers who depend on off-farm income is relatively bright in certain areas of rapid employment growth," adds economist Robert Hoppe. "On the other hand, in areas like the slow-growing Mississippi Delta, poor farmers, black or white, may have to leave in order to find attractive economic opportunities."

The Number of Black Farmers Exceeded 925,000 In 1920, But Fell to a Fraction of That Number By 1982



Food Bites Deeper into Foreign Budgets

Americans typically spend less for food—as a share of their overall expenditures—than consumers in other nations around the world, according to economists Penny Korb and Harry Harp of USDA's Economic Research Service.

The share is smaller because total

U.S Had Smallest Share of Expenditures for Food in 1982

Country	Total private expenditures	Food expenditures	Food	Food and beverages
	U.S. dollars per person		*Percent*	
Italy	3,731	996	26.7	28.8
West Germany	6,054	1,401	23.2	NA
France	6,248	1,101	17.6	20.1
Australia	6,573	1,108	16.9	22.3
United Kingdom	4,661	708	15.2	17.8
Canada	6,858	1,010	14.7	16.2
United States	8,644	1,050	12.1	14.4

Source: OECD National Accounts 1970-82, Volume II, 1984 edition.

private expenditures in the United States are much larger than in other developed countries, reflecting higher per capita income. In 1982, private per capita expenditures averaged about $3,000 higher in the United States than in the six other developed countries shown on the accompanying table. American spending on food, however, was near the average for these other nations.

Only 14 percent of U.S. consumers' total private expenditures (excluding savings and taxes) went for at-home food and beverages in 1982—the latest year for which comparable developed country data are available. The U.S. share for food alone was 12 percent.

That contrasts with the slightly higher averages in other developed countries and the much higher averages in less developed nations.

(continued on next page)

Gleanings

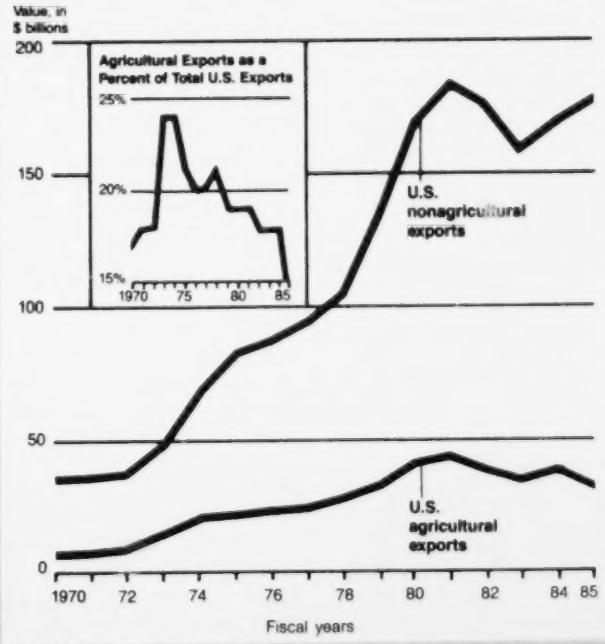
The two world leaders in food production are the United States and China. Each produces around 14%-15% of the world's food, according to analysts of USDA's Economic Research Service. Over the last 3 years, for example, the U.S. grain harvest (wheat, feed grains, and milled rice) averaged 298 million metric tons; China's grain harvest averaged 296 million tons per year. Oilseeds output averaged 56 million tons in the United States and about 30 million tons in China. U.S. red meat and poultry production was about 25 million tons per year on average; China produced roughly 17 million tons.

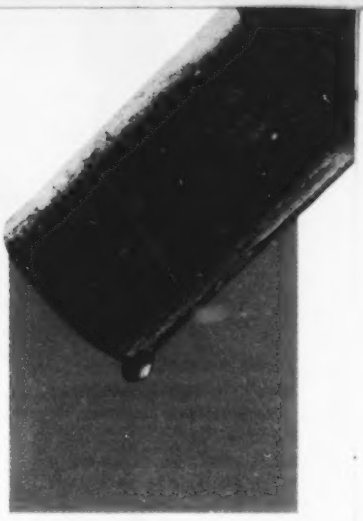
. . . but China has 22% of the world's population to feed, while the United States has only 5%. This leaves American farmers very dependent on foreign markets, yet it makes the United States the world's leading agricultural exporter. The population difference also explains the wide gap in per capita consumption between the two nations. Estimates for 1979-81 indicate that Americans consumed an average of about 1,200 more calories per person per day than the Chinese. The disparity was in "animal" rather than "vegetable" products, notes ERS economist Linda Bailey. Average daily calories from red meat, poultry, fish, dairy products, eggs, and other animal products were estimated at 1,316 for Americans and just 245 for the Chinese.

Nonfarm products seem to be leading the recovery from the overall slump in U.S. exports, reports economist Tom Warden of the Economic Research Service. After declining from a record $185 billion in fiscal 1981 to $159 billion in 1983, the value of U.S. nonagricultural exports increased in each of the last 2 years. U.S. agricultural exports also reached an all-time high in 1981 ($43.8 billion), but value has since dropped to a 7-year low of $31.2 billion. Another decline is expected this year. Sales of farm products brought in only 15% of our total export earnings in fiscal 1985, down from 19% in 1980 and 20%-24% in the mid-1970's.

. . . this doesn't mean that agricultural exports are becoming less important, however, because Warden also points out that farm trade is still a moneymaker for the United States. Last year's agricultural trade balance (exports minus imports) was positive to the tune of $11.4 billion. Although that was the lowest figure in several years, it helped defray a portion of the record $135-billion deficit in imports and exports of nonagricultural goods.

While U.S. Agricultural Exports Remain Depressed, a Recovery in Nonfarm Exports Seems Underway





Canadian consumers, for example, allocated more than 18 percent of their expenditures for food and beverages, with food accounting for almost 15 percent. The shares for British consumers were 17.8 percent for food and beverages and about 15 percent for food. Italy topped the list of seven developed nations studied, with consumers spending 28.8 percent of total private expenditures for food and beverages and 26.7 percent for food.

In most developed nations, note the economists, the percentage of expenditures for food declined between 1972 and 1982, reflecting abundant supplies and rising incomes.

Among the centrally planned economies, consumers in the Soviet Union devoted almost 37 percent of total expenditures to food and beverages, according to 1980 data (the latest available for worldwide comparisons). Food accounted for about 26 percent and alcoholic beverages nearly 10 percent of total expenditures.

In the developing world, the budget share balloons for food.

China's consumers, for instance, allocated an average of 60 percent of their total spending for food, with beverages accounting for another 2 percent. Only consumers in the African nation of Niger spent a larger share—almost 62 percent—of total expenditures for food and about 2 percent for beverages.

Soviets Squeezed by Cheap Oil

Soviet grain harvests are often a harbinger of how much U.S. grain the Soviets will purchase.

If Russian harvests are good, American farmers can usually expect to sell far fewer bushels. If the harvests are not so good, U.S. farmers often enjoy much higher sales to the Soviets.

This rule-of-thumb reasoning may be complicated for the moment, however, by a new factor in U.S.-Soviet trade—the slump in Soviet earnings from oil exports.

That's the view of Economic Research Service analyst Dennis Miller, who recently examined the USSR's falling fortunes and its possible impact on American grain exports.

"Plunging oil prices threaten to significantly reduce the Soviets' hard currency earnings and their ability to sustain imports from the West," says Miller.

"The Soviet Union is the world's largest petroleum producer," he says. "Compared to Saudi Arabia, the Soviets are modest exporters, consuming most of their energy production domestically."

But by 1984, he notes, Soviet energy exports (of oil and natural gas) still had swelled to more than $19 billion—enough, certainly, to affect purchases of foreign goods and grain.

Earnings from exports of petroleum zoomed in the 1970's and early 1980's, rising from $430 million in 1970 to $15.6 billion in 1983. Earnings from natural gas sales increased from roughly $14 million in 1970 to $3.8 billion in 1984.

"These energy sales became the two largest components of hard currency export earnings for the Soviet Union by 1984," Miller says. Oil accounted for 58 percent of Soviet foreign exchange earnings and natural gas an additional 14.5 percent.

"The Soviets took full advantage of the large increases in international prices of petroleum set by OPEC," says Miller. The world price quadrupled in 1973-74, and then doubled in 1978-79.

During the span of the 1970's and early 1980's, U.S. grain sales to the USSR were also soaring.

"The United States sold the Soviets 138.5 million tons of grain valued at $18.3 billion over the 1973-85 period," says Miller. "In 1985, the Soviet Union bought 94 percent of its grain imports from Western countries."

He says "these massive grain purchases were largely financed by Soviet energy exports. And it appears that over the long run the Soviets have tended to allocate a generally constant proportion of their energy export earnings for grain imports."

Now that oil revenues are down, analysts are wondering whether that pattern will continue.

"The Soviets' export earnings could fall by as much as $8 billion in 1986 from 1984 and remain low for an indefinite period," says Miller. "This decline is 29 to 33 percent of the total value of Soviet hard currency imports in 1984, and roughly as much as the Soviet Union has ever paid for grain imports in any one year."

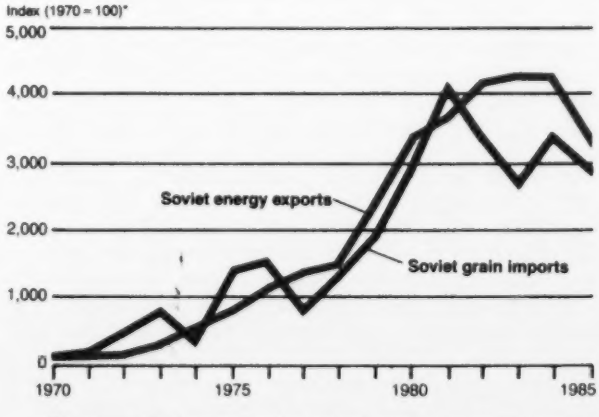
He says the "Soviets first felt this hard currency squeeze in 1985, and it may have been a major reason why the Soviets violated the provisions of their long-term purchase agreement with the United States." Under that accord, the Soviets were obligated to buy 4 million tons of U.S. wheat during 1984-85. Their actual purchases fell short by more than a million tons. He notes that the Soviets did buy a large amount of U.S. corn over the same time period.

Miller speculates that "lower energy earnings could be a reason why Soviet purchases from the United States are expected to drop from $2.5 billion in fiscal 1985 to $1.4 billion this fiscal year."

He adds that some of the loss in oil revenues may be made up by increased Soviet sales of gold.

"The Soviet Union is the world's second largest gold producer," he says. "In 1985, its estimated gold sales reached $3.1 billion, up from $1.3 billion in 1983. Even so, such

Soviet Grain Imports Have Been Closely Linked to Energy Exports



*Based upon value of energy exports and total grain imports (both measured in current U.S. dollars).

increases in gold sales are not enough to cover the likely reduction in petroleum revenues."

In fact, he adds, "selling a lot of gold would probably depress its price."

Nigeria: An Export Market Profile

Africa is often seen as a continent composed of nations in need of food assistance.

That's not the case with Nigeria, however.

As Africa's most populous country, Nigeria may have more mouths to feed—but it also has more money to buy food, thanks to large oil exports. And, despite declines in oil prices, petroleum exports and population growth are expected to continue driving demand for commercial food imports in the future.

"Nigeria has consistently been among the ten largest importers of U.S. grain and is one of the largest oil suppliers to the United States," says Carl Mabbs-Zeno, an analyst with USDA's Economic Research Service. "It's a nation with especially strong prospects for importing U.S. agricultural products."

He isn't predicting that Nigeria will soon match its 1981 peak of $544 million in farm product imports from the United States, though.

The figures have fallen sharply since then, with sales of $313 million in 1985, but Mabbs-Zeno says politics may have played more of a role than any real market loss. Nigeria's military has staged two coups in the last 3 years, changing and confusing farm and food policies.

"With the decline in oil revenues, the political decision was made to curtail imports," he says. "This does not reflect a lack of market demand, since the government acts as the import buyer and thereby controls the market."

Most affected were U.S. exports of corn and rice. American corn exports fell from 279,000 tons in 1982 to 94,000 tons by 1985. Rice dropped from 402,000 tons in 1981 to 50 tons in 1984.

And, in an effort to boost domestic production, Nigeria recently put temporary import bans on many farm goods, such as rice, corn, and poultry.

"The rice ban will have less effect now on the United States because U.S. rice exports to Nigeria have largely been replaced by rice from Thailand," says Mabbs-Zeno.

Not yet affected by the restrictions is wheat, the principal U.S. farm export to Nigeria. But the country's military government has been publicly considering a temporary wheat ban.

Even so, Mabbs-Zeno projects that imports of wheat should grow substantially.

One reason is the "changing food preferences of an increasingly urban population." Urban consumers are developing a taste for wheat bread over locally produced coarse grain meals.

"By 1990, Nigeria may import almost 2.2 million tons of wheat annually, up from 1.5 million tons in 1983," says Mabbs-Zeno. "While the United States has been the major supplier of wheat, new competitors for this market will challenge the U.S. market share."

He also expects corn imports to recover (once the ban is lifted).

"Because imported corn is used entirely for feed, the quantity imported has grown rapidly as higher incomes boosted demand for poultry," Mabbs-Zeno says. "With no specific policy directed toward domestic feed corn production, its growth rate is unlikely to meet the rising demand for poultry feeding."

According to Mabbs-Zeno, "the large population (more than 90 million), an established petroleum industry, and a slowly developing farm sector virtually assure large import demand for many years to come. The tougher question is whether the United States will be able to hold onto its market share."

Since 1976, the United States has provided between 21 and 27 percent of Nigeria's total farm imports. Already some traditional trading patterns are being altered by "recent bilateral agreements with several countries, including France and Brazil."

But Mabbs-Zeno says "the United States and Nigeria should remain major trading partners in agricultural goods, despite considerable yearly variation in commodities and prices."

Leaders

Our Top Customers: Sales Were Down in 22 of 1985's 25 Major Markets for U.S. Agricultural Exports

	Value of U.S. ag exports		Ranking among customers	
	Fiscal 1985	Fiscal 1984	Fiscal 1985	Fiscal 1984
	In $millions			
Japan	5,663	6,935	1	1
USSR	2,509	2,512	2	2
Netherlands[1]	1,927	2,227	3	3
Canada[2]	1,727	1,936	4	5
Mexico	1,566	1,966	5	4
Korea	1,400	1,816	6	6
Taiwan	1,342	1,409	7	7
West Germany	900	1,260	8	8
Spain	826	1,232	9	9
Egypt	766	882	10	10
Venezuela	721	778	11	13
Italy	677	771	12	14
United Kingdom	628	790	13	12
Brazil	557	438	14	21
Portugal	502	702	15	15
Belgium-Lux.[1]	470	836	16	11
Hong Kong	396	407	17	23
France	396	510	18	18
Saudi Arabia	381	497	19	19
Iraq	371	423	20	22
Nigeria	367	345	21	26
Israel	300	351	22	25
Philippines	285	300	23	28
China	239	692	24	16
Colombia	238	220	25	33

[1] Not adjusted for transshipments. [2] Adjusted for transshipments.
Source: Economist Steve MacDonald, International Economics Division, Economic Research Service.

The Business of Beans

Beans and franks, Boston baked beans, black beans and rice, refried beans—Americans eat more than a dozen different types of dry beans. But they don't eat as many as they used to, even though some specialty beans—like garbanzos—have recently become quite popular. The main reasons for the decline in bean consumption: rising disposable incomes and changing lifestyles.

Although dry beans have never been a mainstay of the American diet, people used to eat about 7½ pounds of them a year in the 1960's. Higher incomes and changing consumer tastes and demographic patterns have caused per capita bean consumption to decline by about 20 percent from the early 1960's to an estimated 6 pounds in 1984. The declining trend has probably bottomed out, and consumption should remain stable at about 6 pounds per person for the foreseeable future.

In America, there are big differences in regional tastes for beans. White beans are usually the favorite in the North. In New England, for example, the preference for Boston baked beans moves the navy bean (a white-bean variety) to the top of the list. Black-eyed beans are usually favored in the South, except around New Orleans where red beans are the common fare. And, in the West, the most commonly eaten bean is the pinto.

In spite of the regional favorites, declines in bean consumption have been geographically widespread. According to surveys conducted in 1964 and 1976 by USDA's Human Nutrition Information Service, bean consumption declined all over the country, except in the West. Even there, consumption increased only slightly, perhaps because of the growth of the Hispanic population for whom beans are an important part of the diet. Rising incomes and urbanization contributed to a 43-percent decline in bean use in the South between 1964 and 1976. The same is true for the Northeast and North Central states, where consumption tumbled 43 and 56 percent, respectively. Today, bean consumption is highest in the West and the South.

In spite of the regional favorites, declines in bean consumption have been geographically widespread.

An Alternative Source of Protein

Since beans are a relatively inexpensive source of protein (when compared with meats and fish), it's generally thought that the lowest income households consume the most beans. Surprisingly, USDA data reveal that the poorest households did not use the most beans in 1964 or in 1976. The most likely reason: federal food programs. The very poor usually qualify for food stamps and other forms of federal aid that enable them to upgrade their diets.

Those who used the most beans were households at the upper end of the low-income range. These people may not have been eligible for federal assistance programs and, consequently, they probably relied more heavily on beans as an alternative source of protein.

Still, as incomes rise, bean consumption usually declines. Research on dry bean demand suggests that a 1-percent increase in income will mean a change in bean consumption that could range from a 0.1-percent increase to a 0.4-percent decrease.

Not all the decline in bean consumption is the result of income. The shift toward single-parent homes and the rise of women in the work force, for example, have also affected bean demand. Many bean dishes require extensive preparation, cleaning, and cooking. So, as consumers who have less time to spend in the kitchen shifted to convenience foods, bean popularity declined.

Just as consumers in different areas of the country prefer certain beans, farmers in various regions specialize in growing different classes. Pinto beans, the only exception, are grown in every region.

There are 12 major classes of dry beans: pinto, navy, great northern, red kidney, limas, black turtle-soup beans, cranberry beans, black-eyes, small red beans, pinks, small whites, and garbanzos.

Michigan, best known for its navy or pea beans, is the top producing state. Nebraska, second, accounted for almost 90 percent of great northern bean production. California, another major bean producer, grows a wide variety, including large and baby limas, kidney beans, garbanzos, and black-eyes.

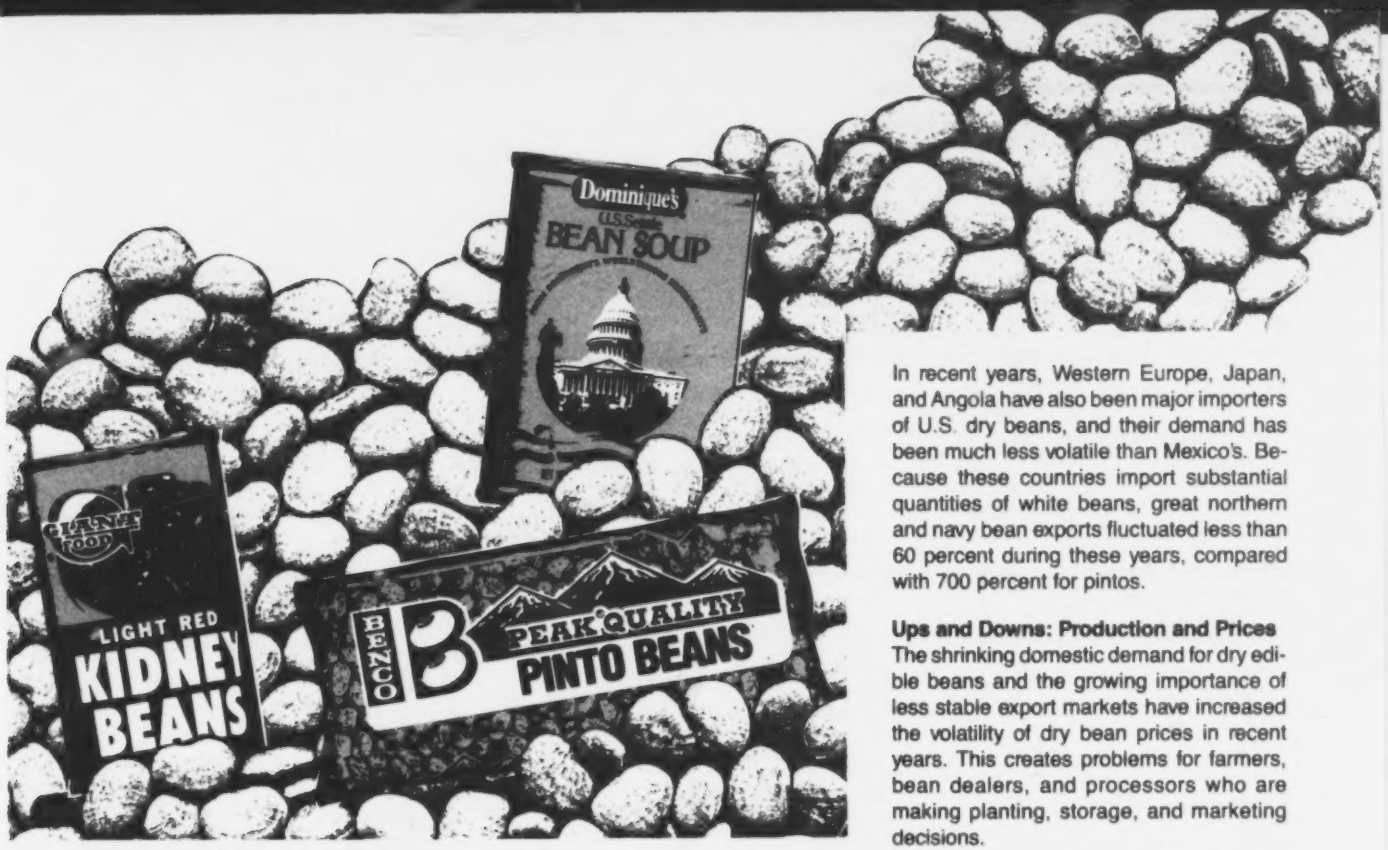
Beans: For Export

But since overall domestic demand for beans has sagged, bean producers have become increasingly dependent on exports.

Although the United States ranks fourth behind India, Brazil, and Mexico in dry bean production, it's the world's largest exporter. Throughout the 1960's and early 1970's, U.S. annual dry bean exports fluctuated between 2 and 4 million cwt. In the late 1970's, with worldwide shortages of protein and grains, exports rose to 4 to 6 million cwt per year. From 1979 to 1982, exports soared by almost 150 percent to 17 million cwt, primarily in response to increased Mexican demand.

Mexico had accorded low priority to dry bean production until it began a self-sufficiency plan for basic crops, including beans, in 1980. Mexico was expected to reduce bean imports during the 2 years the self-sufficiency program was in effect, but the opposite occurred. The Mexican dry bean crop was exceptionally poor in 1979, while demand mounted with high oil prices and rising incomes. For 2 years, Mexican dry bean imports soared. However, by 1983, Mexico had large stocks of beans, the peso and oil prices had declined, and bean imports tumbled.

The unpredictable Mexican demand has not affected all classes of beans in the same way. Pinto beans and black turtle soup beans accounted for most of the export growth in the early 1980's. Pinto exports, alone, rose over 700 percent from 964,000 cwt in 1979 to 8.5 million cwt in 1982. However, in 1983/84, exports fell below 315,000 cwt.



A Glut Avoided

Past farm bills have never been much of a concern to farmers who grow dry edible beans and other nonprogram crops (crops without government price supports). Not so with the latest version of major farm legislation, officially known as the Food Security Act of 1985.

This farm bill, unlike those preceding it, had the potential of directly affecting markets for nonprogram crops. How? By encouraging farmers who grow program crops to switch to alternative, nonprogram crops.

Here's how one provision called 50/92 would have worked: Farmers who grow program crops (wheat, feed grains, cotton, and rice) could have shifted up to half their permitted acreage (base acreage minus the required set aside) to nonprogram crops or conserving use and still have received deficiency payments on 92 percent of their permitted acreage, an attractive offer that could have curbed the surpluses of major crops.

The problem was that the established markets for the most likely alternative crops—minor commodities like dry edible beans, sunflowers, safflowers, and rapeseed—would never have been able to handle dramatically increased production without drastically reduced prices.

Nonprogram crop producers and farm groups voiced their concerns, and Congress responded by amending the 50/92 provision.

As it stands now, program crop producers may still shift up to 50 percent of their acreage to conserving uses while receiving deficiency payments on 92 percent of their acreage. They cannot shift acreage to alternative crops.

The reason that such a shift would have been overwhelming to the dry edible bean industry can easily be illustrated. A shift of only 1 percent of last year's corn acreage would have increased dry bean acreage by 25 percent in 1986. The likely result: sharply lower prices. Even though reduced prices should seem attractive at the supermarket, U.S. consumers wouldn't buy enough additional beans to make up for the excess production. The only hope for the surpluses would have been significantly increased exports, an unlikely situation.

In recent years, Western Europe, Japan, and Angola have also been major importers of U.S. dry beans, and their demand has been much less volatile than Mexico's. Because these countries import substantial quantities of white beans, great northern and navy bean exports fluctuated less than 60 percent during these years, compared with 700 percent for pintos.

Ups and Downs: Production and Prices

The shrinking domestic demand for dry edible beans and the growing importance of less stable export markets have increased the volatility of dry bean prices in recent years. This creates problems for farmers, bean dealers, and processors who are making planting, storage, and marketing decisions.

During the 1960's, dry bean prices remained relatively stable, ranging from $7 to $12 per cwt. A major break came in 1972 when worldwide shortages of protein sources drove dry bean prices to nearly $30 per cwt. Since 1980, prices have ranged from about $14 to $28.

Bean farmers, used to the stable markets and prices of the 1960's and early 1970's, increased production in response to greater exports and rising prices. When the export boom hit in 1979, farmers who were already growing some beans simply expanded their acreage at the expense of wheat, corn, or other crops. As a result, planted acreage of dry beans rose at an annual rate of 20 percent to 2.3 million acres between 1979 and 1981. Production increased from 20.5 million cwt in 1979 to 32.2 million in 1981. The production of colored beans, preferred by the Mexican market, increased the most. Pinto bean output increased nearly 60 percent from 1979 to 1981.

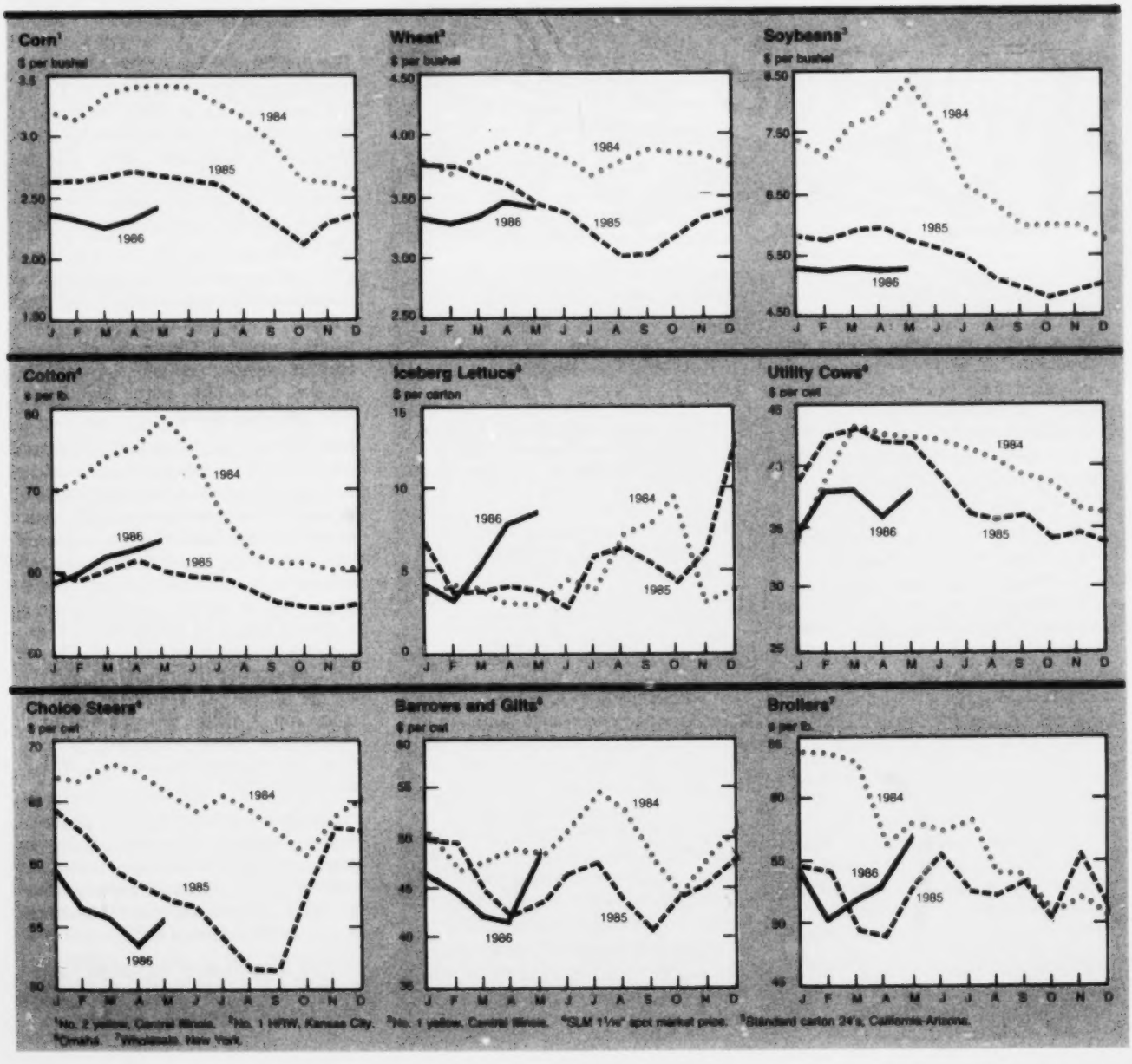
Declining exports and sagging prices in 1981 and 1982 led producers to reduce dry bean acreage from the record levels of 1981. However, farmers still harvested over 1.5 million acres of beans in 1985, with an output of 22.2 million cwt. □

[Written by agricultural economist Neilson C. Conklin of the National Economics Division, Economic Research Service.]

FARMLINE TRENDS

Monthly Price Monitor

USDA's May index of farm prices increased 2.5% but was 4.6% below its year-earlier level. May prices were up from April for all the commodities charted below, except wheat. Corn rose to $2.42 per bushel, the highest since August 1985. Wheat dropped 6¢ to $3.40, but that was still better than the price at the start of the year. Soybean prices inched up to $5.26. Cotton, at 64¢ per lb., was the highest since July 1984. In the meat animals area, utility cow prices increased to $37.83 per cwt; choice steers gained $2 to $55.63; and barrow and gilt prices jumped to $48 from about $41 in April. Broiler prices rose above 56¢ a lb. for the first time since July 1984. All prices shown are monthly averages.



Where Would Your Farm Fit In?

It's the Differences that Stand Out Among These Five Profiles of U.S. Farms by Sales Class

	Value of agricultural sales, 1982				
	Less than $10,000	$10,000 -$39,999	$40,000 -$249,999	$250,000 -$499,999	$500,000 or more
Number of farms by sales class	1,175,283	544,401	588,172	62,893	29,802
Per farm averages by sales class					
Farm acreage*	110	327	793	1,807	3,727
Percent of acreage owned by operator*	89	70	58	56	61
Avg. operator age*	52.0	50.8	47.6	48.2	49.9
Value of land and buildings	$113,828	$238,901	$601,491	$1,478,107	$3,290,772
Value of machinery and vehicles	$13,705	$34,723	$90,744	$179,711	$306,053
Total assets	$150,549	$314,426	$811,625	$1,967,473	$4,433,098
Total liabilities	$15,632	$45,455	$165,511	$492,028	$1,537,720
Total equity	$134,917	$268,971	$646,114	$1,475,445	$2,895,378
Yield*					
Corn (bu/acre)	73	91	108	119	122
Wheat (bu/acre)	24	27	33	39	45
Soybeans (bu/acre)	23	27	31	33	32
Cotton (bales/acre)	.51	.55	.83	1.35	1.92
Value of commodity sales	$3,296	$21,622	$100,784	$342,851	$1,558,690
Net farm income[1]	−$1,431	−$349	$15,628	$81,737	$456,779
Off-farm income[1]	$18,755	$16,499	$9,536	$11,231	$17,233
Total income[1]	$17,324	$16,150	$25,164	$92,968	$474,012
Percentages by sales class					
Percent of U.S. farms	49.0	22.7	24.5	2.6	1.2
Percent of all land in farms*	13.0	17.8	46.7	11.4	11.1
Percent of total U.S. sales*					
Grains	2.0	11.2	57.5	17.3	11.9
Cotton	.5	4.1	29.7	19.1	46.5
Vegetables	1.4	3.8	15.1	10.4	69.3
Dairy products	.2	5.0	61.0	14.8	19.1
Poultry	.2	.9	25.9	21.6	51.3
All cattle	5.1	8.9	26.3	10.4	49.3
Hogs	1.9	8.0	52.6	19.9	17.5
All farm products	2.7	8.2	41.5	15.1	32.5
Percent of operators reporting 200 or more days of off-farm work*	51.1	30.2	9.8	6.7	7.7

Sources: 1982 data compiled from ERS' **Economic Indicators of the Farm Sector: National Financial Summary, 1984** and (for items with asterisks) from the 1982 Census of Agriculture.
[1] The returns of many farms are shared by more than one farm household. This is especially true for the larger farms, which are more likely than smaller farms to be organized as partnerships or corporations. Therefore, per farm income averages do not necessarily represent income averages of individual farm households. Because of data limitations, the off-farm income figure is reported for only one farm household per farm (the "farm operator" household).

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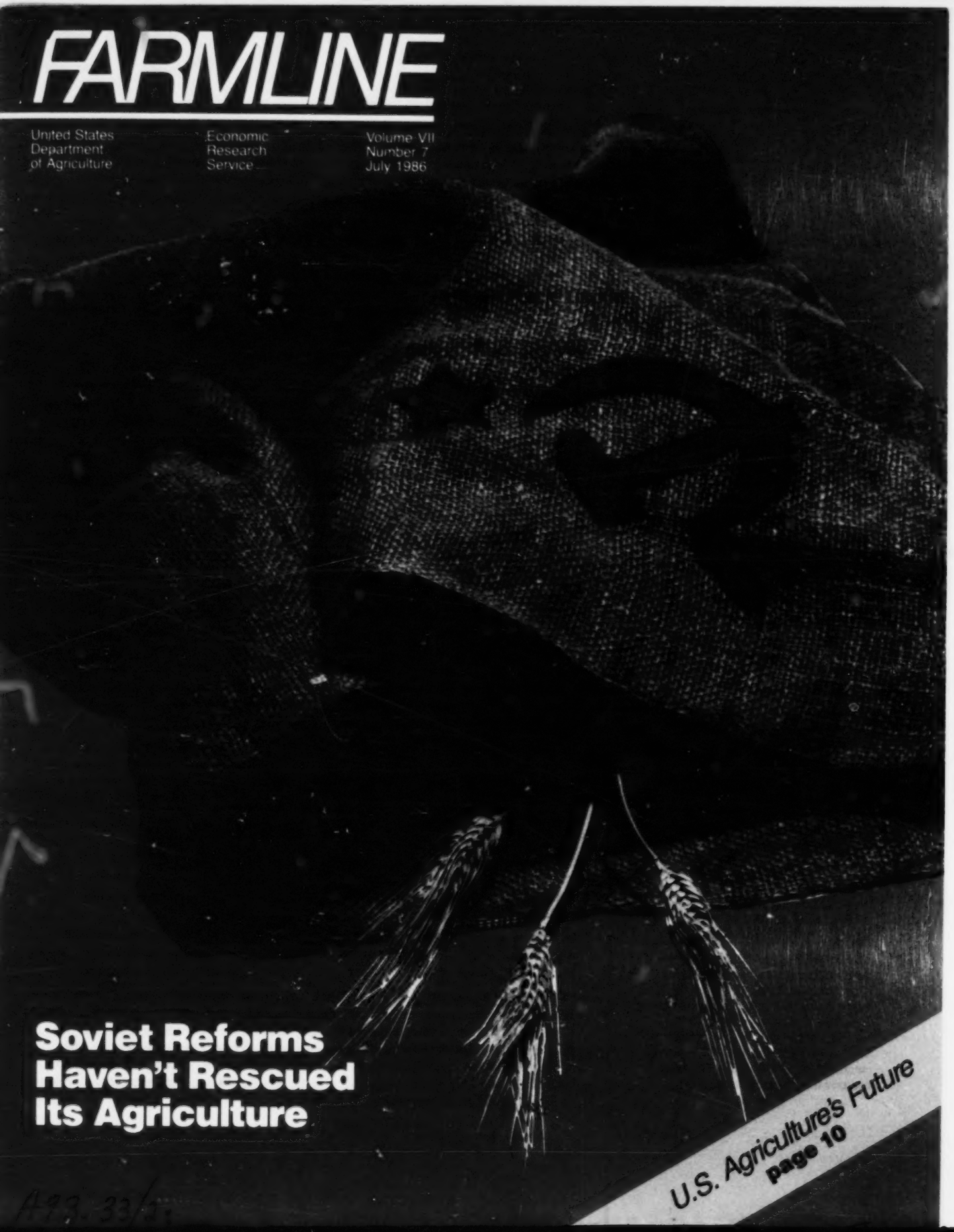

Soviet Reforms Haven't Rescued Its Agriculture

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PERSPECTIVES

FOOD PRICES ARE BEING HELD DOWN by low farm prices and the slow rate of inflation, which affects food processing and distribution costs. This year, the consumer food price index is expected to rise only about 2%-3%, according to USDA economist Ralph Parlett of the Economic Research Service. If so, that's just slightly above last year's increase, but it's down sharply from annual increases of 9%-12% during 1975-80.

One major factor in the food price picture is meat, according to Parlett. Beef and veal prices were down in the first 5 months of the year, reflecting large supplies. Supplies should remain large this summer, and retail beef prices are expected to be fairly stable. However, low cattle prices and poor financial conditions have caused producers to reduce the nation's cattle herd since 1982. This year's beginning inventory was the lowest since 1963. As a result of the smaller inventory, beef production is expected to decline later this year. Production in the fourth quarter may be 6% smaller than a year ago, and retail beef prices may increase 4%-5% above this summer's prices.

"We've also had large supplies of pork during the first half of the year," Parlett says, "partly because financial difficulties have caused producers to sell hogs that otherwise may have been retained for the breeding herd." As a result, the inventory of pigs and hogs is currently at an 11-year low, and pork supplies have tightened up, and will remain tight for the rest of the year. While pork prices fell in 3 of the first 5 months of the year, they will be sharply higher during the rest of the year, the economist says.

Poultry supplies will be large through the rest of the year, and prices should remain stable. "Poultry is filling the gap of smaller red meat supplies," Parlett says. "Consumers will probably add about 3 pounds of poultry to their diets this year at the expense of around 4 pounds of red meats."

This year's increase in food prices would have been even lower if it hadn't been for steep increases in two items: coffee, up 10% and seafood, up 31%. The severe drought in the primary growing areas of South America put pressure on coffee prices, and a fisherman's strike earlier this year in New England caused the problem for seafood.

Nonetheless, food prices have been increasing at a slower rate than the prices of other items consumers buy. Since 1981, food prices have risen by an average 3% a year, compared with 4.5% for all other goods and services. In fact, 1985 was the seventh consecutive year in which food prices increased less than the general inflation rate in the economy. Last year's increase in food costs — at 2.3% — compared with a general inflation rate of 3.6%.

Grocery store prices generally increase at a slower rate than the prices of foods eaten at restaurants, etc. The increased labor and processing costs peg restaurant food price increases more closely to the overall consumer price index. And this trend will continue this year.

Most of the foods that U.S. consumers buy — over four-fifths — are domestically produced farm foods. The remaining one-fifth consists of manufactured beverages (mainly soft drinks) and imported foods such as coffee, sugar, bananas, and imported seafood. As a result, most of the changes in food prices can be largely traced to two factors, Parlett says. Farm prices and supplies of domestically produced foods play a key role. More important in most years, however, are the costs of processing and distributing foods beyond the farm gate. These costs account for about two-thirds of the average food dollar spent in grocery stores.

Supplies of most domestically produced foods will continue to be ample through the rest of this year, Parlett says, and farm prices of livestock and crop commodities are expected to average from 1%-3% lower in 1986 than last year. Both factors will keep food price increases down.

What about the costs of processing and distribution? According to Parlett, there has been very little increase in marketing costs this year, mainly because of lower crude oil prices and reduced energy costs. "This has affected most of the components of the food marketing process," he says, "from manufacturing the materials and packaging, to processing, transportation, and refrigerated storage." In addition, labor costs — which can account for about half of all food marketing costs — are rising slowly. This is partly because of small wage increases for workers, such as retail clerks and meatcutters.

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FEATURES

Soviet Agriculture Sluggish Despite "Food Program" Reforms *by Doug Martinez* 4

The major shortcomings of Soviet agriculture tend to persist after individual incidents, like Chernobyl, are forgotten, say USDA analysts who monitor the USSR's farm and food sectors. Today, these shortcomings can be seen in the Soviet "Food Program," which hasn't come close to achieving its ambitious aims.

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What do the years ahead hold for U.S. agriculture? According to several USDA economists, the painful adjustment isn't over, but the farm sector is now positioning itself for modest gains in the late 1980's and beyond.

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The new Philippine government inherited a nation beset with economic and agricultural problems that are begging for attention. Economist Leslie Ross says the task of revitalizing the struggling economy could take years to accomplish.

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Keep it handy. This is your guide to July-December release dates for situation and outlook reports of the Economic Research Service, crop and livestock reports of the National Agricultural Statistics Service, and supply-demand estimates of the World Agricultural Outlook Board.

Soviet Agriculture Still Sluggish Despite "Food Program" Reforms

Although the effects are still being assessed, the Chernobyl nuclear accident is not likely to rank high on the list of long-term problems facing Soviet agriculture.

The major shortcomings of Soviet agriculture tend to persist after individual incidents, like Chernobyl, are forgotten, say USDA analysts who monitor the USSR's farm and food sectors.

Today, these shortcomings can be seen in the Soviet "Food Program," which was adopted in 1982 and hasn't come close to achieving its ambitious aims.

After climbing to an impressive 237 million metric tons in 1978, Soviet grain production has stagnated in the range of 160-190 million tons a year. Russian farmers did chalk up a record in overall agricultural output in 1983, but favorable weather was largely the reason.

The Soviet Food Program had its origins in the slow growth and rapidly rising costs of production in agriculture during the 1970's, says economist Robert Koopman of USDA's Economic Research Service. "Moreover, the U.S. grain embargo of 1980 moved the Russians to seek increased self-sufficiency in agricultural production, particularly in grains."

Midway through the Food Program, though, the Soviets are still not meeting their targets for increased food production.

"Soviet agricultural performance from 1981 to 1985 was the most disappointing in recent history," says Koopman. "Significant shortfalls were especially evident in grains."

Grain production during the 11th Five-Year Plan (FYP), from 1981 to 1985, fell below output of the two preceding FYP's. On average, production was below target by 62 million metric tons annually, or more than 300 million tons over the entire 5-year period.

Rising Grain Imports

Grain imports, Koopman says, averaged 42 million tons annually—nearly twice that of the 10th FYP (1976-80) and triple the 9th FYP (1971-75) figure.

"Grain's share of the total value of agricultural imports increased from 24 to 35 percent between the 9th and 11th Five-Year Plans," he says. "Despite the heavy imports, total grain availability declined."

The U.S. grain embargo of 1980 moved the Russians to seek increased self-sufficiency in farm production.

Koopman says the shortfall is likely to continue in the current, 12th FYP (1986-90). "Grain production is estimated to have averaged 178 million metric tons a year during the 11th FYP, requiring a growth of 7.2 percent annually to reach the 1990 target of 250 to 255 million metric tons. Even if the Soviets had managed to attain average grain production in the 205 million metric ton range, as they did during the 10th FYP, growth would have to average 4.3 percent a year for the next 5 years to reach the 1990 target."

He notes that the highest growth rate achieved in the last 15 years was the 2.5-percent rate reached in the 10th FYP.

"Although consistently good weather would improve Soviet grain production, many other factors such as continued problems with soil fertility, poor organization and management of farms, and untimely deliveries of necessary inputs—which are often of poor quality—suggest that the 12th FYP grain target is overly ambitious."

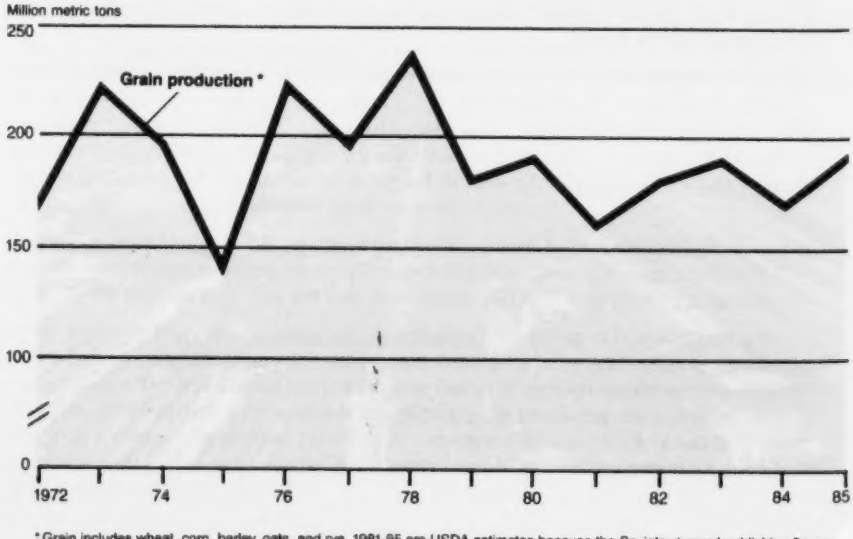
Meat, milk, and egg production fared somewhat better, coming closer to fulfilling FYP plans. Even so, meat production is targeted at 21 million metric tons for 1990, requiring 4.2-percent annual growth over 1985's production level.

"With recent growth averaging under 2 percent per year," says Koopman, "the 1990 target currently appears unattainable."

He is more optimistic that goals for milk and egg production will meet the targets.

"The 1990 target level for milk of 104 million metric tons appears reasonable, calling for only a 1.3-percent increase annually. And

Soviet Grain Production Remains Well Below the 1978 Record . . .



* Grain includes wheat, corn, barley, oats, and rye. 1981-85 are USDA estimates because the Soviets stopped publishing figures.
Photo courtesy of SOVFOTO.

The Soviet "Food Program" was intended to boost food production and provide a better diet, including more meat, to the Soviet people.

egg production should easily reach the 1990 target of 80 billion eggs."

Clearly, Koopman says, the Soviets "did not come close to attaining the Food Program goal of agricultural self-sufficiency during the 11th FYP. At the same time, the Soviet people aren't starving. And agriculture's poor performance from 1981 to 1985 has been partly offset by a 57-percent increase in agricultural commodity imports."

According to Koopman, the Soviets had high hopes for the Food Program, which outlines the organizational and economic policy for agriculture and related sectors through 1990.

The Food Program mandates a major restructuring of responsibilities to decentralize agricultural decisionmaking (to a degree) and encourage individual initiative at the farm level.

Despite such changes, Koopman says, "rising production costs and slow growth in per capita production of many agricultural products remain the rule today. Poor coordination and cooperation between agriculture and its allied sectors continue."

Fine-Tuning Not Enough

The trouble, Koopman says, lies with the lack of substantial reforms.

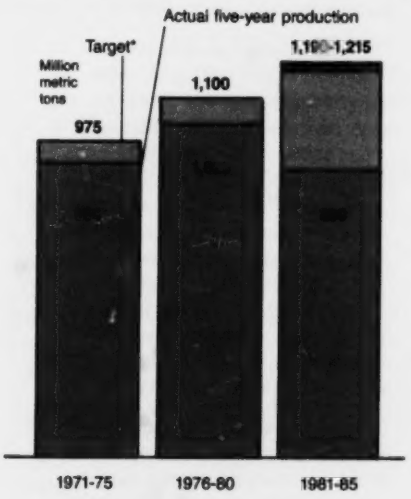
"The Soviets are attempting to fine-tune the present system," he says, "when what may be needed is an entire overhaul or a new model built on market-based incentives."

Why do Western analysts suggest the market-based model? Because it's a system that has spurred agricultural production—in China, most recently—says Koopman.

To begin with, he says, meaningful labor incentives are nearly nonexistent because quality consumer goods are in short supply and worker incomes tend to be equal despite differences in ability and effort. "The incentive problem affects farmworkers, as well as those supplying farm inputs and services. Rural wages have grown rapidly in the last 25 years, narrowing the difference between wages in rural and urban areas. But the lack of consumer goods and services remains more acute in rural areas, hastening the outmigration of the most productive workers."

Koopman says the Soviets started off on the right track, "identifying a number of problems inhibiting Soviet agricultural production, including an inflexible bureaucracy and lack of worker incentives. Their attempts to correct these problems, though, do not address the underlying causes, which include too centralized decisionmaking and the lack of market-determined prices."

. . . And the Gap Between Production and Five-Year Plan Targets Is Widening



* Target figures are official Soviet numbers.

Instead, he continues, "the Food Program adjustments occur at the margin, trying to better the existing system. Hence, the changes can bring about only marginal improvements in agricultural performance. Thus far, even the slight improvements have been undermined by slow and inconsistent adoption of the Food Program's structure and policies."

Koopman goes on to say that "there is little evidence that the Food Program's mandates have significantly bettered management, planning, and decisionmaking. There is still little or no profit incentive for managers to introduce technological changes. Although the Soviet government increased procurement prices for many agricultural commodities in January 1983, resulting in increased farm profits that year, the effects of improved profitability tend to be short lived in the Soviet Union."

At least one aspect of the Food Program does appear to be on schedule.

"The policy of increased investment in rural areas to develop and improve housing, cultural facilities, and schools seems to be working well and should help slow the exodus of highly productive workers from the countryside and raise overall labor productivity in agriculture," says Koopman.

Imbalance in Investment

But the Soviets have not shifted their overall agricultural investments in a balanced way,

despite the Food Program's call for just such a move.

"The program emphasizes the need to increase the share of investment going to the agricultural input and processing sectors," he says. "If these two sectors remain underdeveloped, they will likely hinder overall agricultural development. Even if Soviet investment policies succeed in raising output at the farm level, the increased food production will never reach the consumer without the equipment and the processing centers to handle a larger harvest."

Although Koopman isn't suggesting it will soon happen, he says that Soviet adoption of some modest market incentives—perhaps on the Chinese model—would result in significant gains.

"Under these conditions, the Soviet Union would certainly produce a wider variety of higher quality agricultural products, though they would probably be sold to the public at much higher prices," Koopman says. "And if a market economy was fully implemented in the Soviet farm sector, one might expect a substantial number of the currently operating farms to fail. Many of the geographical areas currently being farmed would fall out of production as a result of comparative disadvantages."

Koopman says "imports would also increase, at least in the short term, although there would be greater productive efficiency in the farmland remaining. This kind of trade-off would likely benefit the Soviet Union if it could import agricultural commodities at significant savings over its current production costs, and reinvest these

Committed to the Status Quo

With the success of the market-oriented farm sectors in the West, and the remarkable results of China's agricultural reforms, why have Soviet planners been unwilling to consider a major overhaul?

"The commitment of the Soviet leadership and its people to the current system should not be underestimated," says economist Robert Koopman. "Soviet agricultural production costs are not excessively high simply because of rigid centralized planning, but also because of the Soviet commitment to regional development and income equality."

He says "farms operating under unfavorable financial conditions are heavily subsidized through higher procurement prices for their production. These farms, which would either go out of business or exist on the margin with very low incomes in a market economy, are a heavy drain on the Soviet economy. It is unlikely that these farms—or their advocates in the Communist Party—would favor reforms that could effectively bring about their demise or dramatically decrease their income."

Koopman notes that "it is not just the weak farms that have strong reasons to resist market-type reforms. Most farm and enterprise managers have acquired the necessary skills to operate under the current centralized system, and have never operated in a market system. The uncertainty of a 'do or die' market environment is not likely to appeal to them. Resistance is also likely from the many bureaucratic layers used to keep the current system operating. Because most of these positions exist solely as a result of a centralized system, any reform involving decentralized decisionmaking will certainly threaten their positions."

Soviet policymakers see an even greater impact, says Koopman.

"From the Soviet perspective, the weaknesses of true market-type reforms are numerous. They would exact potentially high political and social costs. These include the possible loss of political power for the Communist Party, and less control over desired economic growth patterns. Some economic developments under a market-based system, such as greater differences of income among people and unbalanced regional economic development, would certainly conflict with long-ingrained socialist beliefs."

The Soviet view is that "adjustments to the current system are a more reasonable and balanced approach to its economic difficulties. The Soviet leadership is convinced that it can improve economic performance to a satisfactory degree in the next 5 to 10 years without using market-type reforms."

"The Russian people," adds Koopman, "are much better off financially than we imagine them to be."

The Soviet government guarantees employment and has been providing an improving quality of life.

"Russian citizens, on average, are earning good salaries, and many are able to save a substantial share of their earnings," he says. "The government is also providing more consumer goods. I talked to many people during my visit last year. Even though they would like more and better things to buy, they don't want to change the system."

Moreover, he says, Soviet citizens "don't necessarily view the current system as particularly constraining. It has the benefits of providing plentiful supplies of major staples, such as bread and eggs, at low prices. Nearly everyone is guaranteed a place to live, and many Russians have money in the bank. The fact that there is little political freedom and few high quality consumer goods is probably perceived as a small price to pay for such security."

savings into a modern, market-responsive industrial base."

Striving for such potential gains represents the rational choice from a Western perspective, he says.

Koopman suggests that the Soviet Union will likely continue to import sizable quantities of grain and oilseeds.

But he says the United States won t necessarily be the first or largest supplier.

The Soviets are still smarting from the sudden embargo on U.S. grain sales imposed in 1980. Even so, they're shrewd enough to buy from the United States—or any one of its competitors—when the price is right.

U.S. farm exports to the Soviet Union are estimated at $1.4 billion in fiscal 1986, about 55 percent of the value of 1985 exports.

"The Soviet market will continue to be open, but it can't be taken for granted," Koopman says.

At the moment, U.S. soybeans are favored by Soviet officials, who have purchased record amounts for delivery this year. Soviet officials also bought 15.8 million tons of corn from the United States in the 1985 fiscal year, far surpassing the minimum 4 million tons required under a long-term agreement between the two nations.

On the other hand, the Soviets fell more than a million tons short of their 4-million-ton wheat commitment in 1984/85.

Overall, Soviet imports of U.S. farm products were valued at $2.5 billion in fiscal 1985. That represented about a $30-million reduction from the previous fiscal year.

At a projected $1.4 billion, U.S. farm exports to the Soviet Union in fiscal 1986 are projected at only about 55 percent of last year's level.

"A major reason for the drop in U.S. exports is the better than normal Russian grain harvest in 1985," says Koopman. "Other factors are the still strong American dollar relative to the Argentine peso and Canadian dollar, aggressive marketing by major grain competitors, and Soviet problems in earning hard currency for more farm imports." □

[Based largely on information provided by economist Robert Koopman of the International Economics Division, Economic Research Service.]

Gorbachev Targets Losses, Waste, and Lack of Initiative

Soviet leader Mikhail Gorbachev recently announced further plans to aid his nation's ailing agriculture.

Speaking before the country's Communist Party Congress, Gorbachev said "there is progress, but the lag in agriculture is being overcome slowly. It is planned to more than double the growth rate of farm production and to insure a substantial increase in the per capita consumption of meat, milk, vegetables, and fruit."

Gorbachev said the simplest way to meet these goals is to curb losses and waste incurred during harvesting, storage, transportation, and processing.

Gorbachev also said that "farms will be given the opportunity to use, as they see fit, all the produce harvested over and above" established quotas.

Economist Robert Koopman says this change could spur greater individual initiative, boosting farm output.

"However, for this effort to work effectively, the production quotas must be low enough to allow for substantial independent sales," Koopman says. And initially, at least, only fruits and vegetables will be covered under this decree.

1986 Reports Calendar
July-December

Titles of Outlook and Situation Reports of the Economic Research Service are printed in color. Summaries of reports are released at 3 p.m. on the dates shown. Copies of complete reports are due off press about a week later. The ***World Agricultural Supply and Demand Estimates***

JULY

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	1 *Poultry Slaughter*	2 *Dairy Products*	3 *Celery*	4
7	8	9	10 *Noncitrus Fruits & Nuts-Midyear Supplement* *Turkey Hatchery*	11 *World Agricultural Supply & Demand* *Crop Production*
14 *Sub-Saharan Africa* *Mink*	15 *World Food Needs & Availabilities*	16 *China* *Milk Production*	17 *Econ. Indicators of the Farm Sector*	18 *Agricultural Outlook* *Vegetables*
21 *Oil Crops Yearbook* *Catfish*	22 *Dairy Yearbook* *Farm Production Expenditures, 1985*	23 *Fruit Yearbook* *Eggs, Chickens, & Turkeys*	24	25 *Cattle on Feed* *Cattle* *Livestock Slaughter* *Cold Storage*
28 *Peanut Stocks & Processing*	29	30	31 *Egg Products* *Agricultural Prices*	

AUGUST

MONDAY	TUESDAY	WED
4 *Dairy Products*	5	6 *Livesto* *Celery*
11	12 *World Agricultural Supply & Demand* *Crop Production*	13 *Mushro* *Turkey*
18 *FATUS*[2] *Sugar Market Statistics*	19 *Agricultural Outlook* *Cranberries* *Farm Labor*	20 *Export* *Catfish*
25 *Econ. Indicators of the Farm Sector* *Filbert Production (Tentative)*	26 *South Asia*	27 *Fruit*

OCTOBER

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
		1 *Poultry Slaughter*	2 *Dairy Products*	3 *Cherry Utilization*
6 *Celery*	7	8	9 *Vegetables*	10 *World Agricultural Supply & Demand* *Crop Production*
13	14 *Turkey Hatchery*	15	16 *Econ. Indicators of the Farm Sector* *Milk Production*	17
20 *Agricultural Outlook* *Catfish*	21	22 *FATUS*[2]	23 *Eggs, Chickens, & Turkeys*	24 *World Food Needs & Avl'bilities: Update* *Cattle on Feed* *Livestock Slaughter* *Cold Storage*
27	28 *Oil Crops* *Peanut Stocks & Processing*	29 *Fruit*	30 *Grain Stocks* *Rice Stocks*	31 *Egg Products* *Agricultural Prices*

NOVEMBER

MONDAY	TUESDAY	WEDN
3 *Poultry Slaughter*	4 *Dairy Products*	5 *Livesto* *Poult*
10 *World Agricultural Supply & Demand* *Crop Production*	11	12
17 *Sugar Market Statistics*	18 *Agricultural Outlook*	19
24 *Eggs, Chickens, & Turkeys*	25	26 *Commer* *Fertiliz* *Consu*

[1] Reports cover machinery and energy, Aug. 1; and cropland, water, and conservation, Sept. 24.
[2] Foreign Agricultural Trade of the United States.

reports, issued by the World Agricultural Outlook Board, are also printed in color. These reports are released to the press in their entirety on the dates shown. To request subscription information on any of these reports, write: USDA, EMS Information, Room 228, 1301 New York Ave. N.W., Washington, D.C. 20005-4788.

Titles of reports issued by the Agricultural Statistics Board of the National Agricultural Statistics Service (formerly the Statistical Reporting Service) are printed in black. Complete reports are released, most at 3 p.m., on the dates shown. To request subscription information, write: USDA, Agricultural Statistics Board, Room 5829 South Bldg., Washington, D.C. 20250.

SDAY	THURSDAY	FRIDAY
		1 Agricultural Resources[1] Poultry Slaughter
& Poultry	7	8 Vegetables
tchery	14 Milk Production	15 Cotton & Wool Cattle on Feed
	21 Eggs, Chickens, & Turkeys	22 Feed Livestock Slaughter Cold Storage
	28 Peanut Stocks & Processing Rice Stocks	29 Agricultural Prices

SDAY	THURSDAY	FRIDAY
&	6 Vegetable Yearbook Celery	7 Cotton & Wool Yearbook Vegetables
	13 Turkey Hatchery	14 Milk Production Cattle on Feed
	20 World Agriculture Catfish Farm Labor	21 Feed Yearbook Livestock Slaughter Cold Storage
tion	27	28 Agricultural Prices Peanut Stocks & Processing

SEPTEMBER

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	2 Egg Products Poultry Slaughter	3 Wheat	4 Dairy Products	5 Celery
8	9	10 Vegetables	11 World Agricultural Supply & Demand Crop Production	12 Turkey Hatchery
15 Milk Production Cattle on Feed	16 Tobacco	17 Dairy	18 Agricultural Outlook Hop Stocks	19 Sugar & Sweeteners Citrus Fruits Catfish
22 Vegetable Hogs & Pigs Livestock Slaughter Cold Storage	23 World Agriculture Eggs, Chickens, & Turkeys	24 Agricultural Resources[1]	25 Rice	26 Econ. Indicators of the Farm Sector Potatoes & Sweetpotatoes
29 Peanut Stocks & Processing Soybean Stocks	30 Egg Products Agricultural Prices			

DECEMBER

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1 Egg Products	2 OUTLOOK CONFERENCE Exports	3 OUTLOOK CONFERENCE	4 OUTLOOK CONFERENCE Dairy Products Poultry Slaughter	5 Celery
8	9	10 World Agricultural Supply & Demand Crop Production	11	12 Turkey Hatchery Milk Production
15 Tobacco Yearbook Potato Stocks Cattle on Feed	16 Dairy	17 Agricultural Outlook	18 Econ. Indicators of the Farm Sector	19 FATUS[2] Catfish
22 Agricultural Finance Hogs & Pigs Livestock Slaughter Cold Storage	23 Eggs, Chickens, & Turkeys	24	25	26
29 Peanut Stocks & Processing	30 Vegetables, Preliminary	31 Agricultural Prices		

Farm Forecasters Answer: What's Ahead?

"The farm sector is making the necessary adjustments to position itself for modest gains in the late 1980's and beyond."

This is one of the conclusions presented in a recent briefing for top USDA officials. The briefing, prepared by several economists of USDA's Economic Research Service, delved into the origins and the likely outcomes of the current farm financial situation.

It is the view of these economists that the strong market signals of the 1970's—signals that encouraged rapid expansion in production, the excessive bidding up of land values, the accumulation of large debts, and increasingly intensive use of productivity-boosting inputs—had a limited life span. Agriculture's response to those transitory signals, they say, left many farmers highly vulnerable to what was probably an inevitable return to more sustainable conditions.

The adjustments now occurring will continue to force some farmers out of the sector in the next few years . . .

It has been the pain of adjusting to the dramatically different financial and economic environment of the 1980's that has come to be called the "farm crisis."

The consensus of the economists is that something similar to these new, slower growth conditions—rather than those of the 1970's—is likely to prevail through the remainder of this decade and into the 1990's.

What's Ahead?

What does this imply for agriculture in the months and years ahead? The analysts recognize that the consequences of agriculture's financial stress are not over—that some farmers who held on through the last few years will be squeezed out in the next few, and that depressed rural communities cannot expect a quick recovery.

On a more positive note, however, they agree that a major portion of the underlying adjustments seem to have already been made. These include lower production costs and land values, a reduction in the sector's debt burden, more favorable dollar exchange rates on world markets, and the implementation of policies designed to improve the competitiveness of U.S. export commodities.

Although the repercussions will continue, many of the economic adjustments still occurring are going to be less severe than those already experienced, says Ron Meekhof, the ERS economist who directed the briefing.

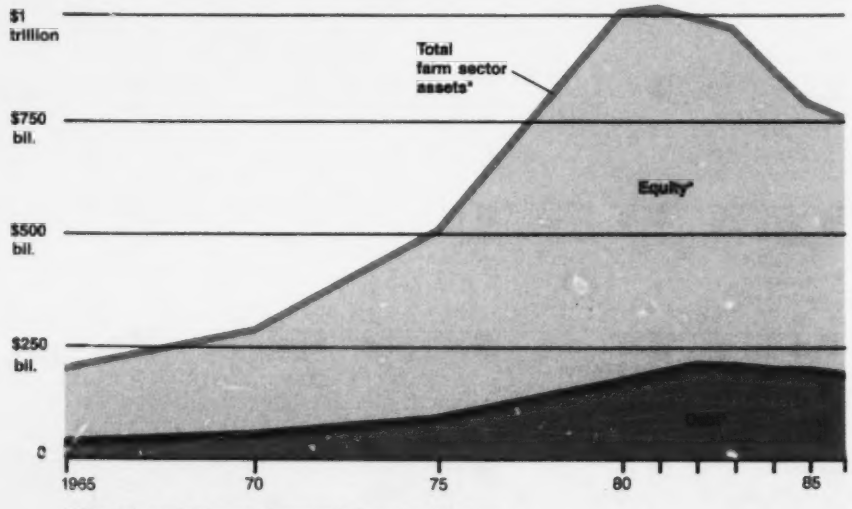
Here is Meekhof's summary of what he and the other analysts had to say about prospects for the future:

- Adjustments are well underway in the farm sector to a lower asset and cost structure that is consistent with the general economic and world agricultural setting of the 1980's. This year will mark the first time since the early 1930's that farmers' cash expenses have dropped for 2 consecutive years.

- These adjustments should leave the sector in considerably better financial condition and poised for modest growth by the end of the decade. Farm policy, as reflected in the 1985 farm bill, will play an important role in providing income support for the sector throughout this period. As agriculture makes the transition from the 1970's environment of rapid demand growth, high inflation, and low real interest rates to the slow demand growth, low inflation, and higher real interest rates of the 1980's, the aggregate measures of the sector's performance will improve.

- Nevertheless, the gains from this transition are not expected to materialize fully until late in this decade. In the next 2 or 3 years, some farmers are likely to be forced

Although $270 Billion in Equity Has Been Lost Since 1980, the Leveling Off of Debt and the Shift to a Lower Asset Structure May Be the First Essential Steps Toward Recovery



1985 preliminary; 1986 forecast. Figures are for December 31 each year.

*Excluding farm operator household assets, equity, and debt.

from the sector by economic circumstances; farm financial institutions will continue to suffer financial stress; the real wealth of the sector may decline further; and farm communities dependent on agriculture will be hard pressed to share in national economic growth. Financial problems will continue until the production capacity of the sector is lowered to levels that are consistent with demand or until production costs and debt have fallen to levels that can be supported by income.

Reducing Excess Capacity

Agriculture's excess capacity and the outlook for demand growth are critical factors affecting the economic outlook for the sector. Meekhof continues:

- The current situation of excess capacity in the farm sector should soon begin to ease. The growth in the use of inputs, especially fertilizers, has fallen significantly, and the growth in the volume of crops produced per acre of U.S. cropland has fallen. Investment in machinery and structures has been below replacement levels since 1981 and should also act to curtail productivity growth. Finally, the demand for new loans, which has already declined about 20 percent, should continue to slow as farmers adopt less intensive production processes and other cost-cutting strategies.

- Demand for farm sector output should gradually improve as a result of continuing world economic growth and the decline in the exchange value of the U.S. dollar that began about a year ago. Lower commodity loan rates should also begin to enhance the competitiveness of U.S. crops. Export demand growth may reach 3 percent per year by the decade's end—still far below the 8-percent annual growth of the 1970's. Domestic demand will grow slowly.

- Farm sector income, returns, and liquidity should begin to improve as many of the above developments occur. However, significant gains are not expected in the near term. Net farm income is likely to be in the $26-$30 billion range in 1986 and 1987, while net cash income is expected to remain near last year's record high, reflecting large government farm payments. At least 2 years of demand growth will be required to draw down existing commodity stocks to normal levels. Land values appear to be bottoming out in some parts of the country, and current rates of return to farmland have climbed back to levels considered near-normal by historical standards.

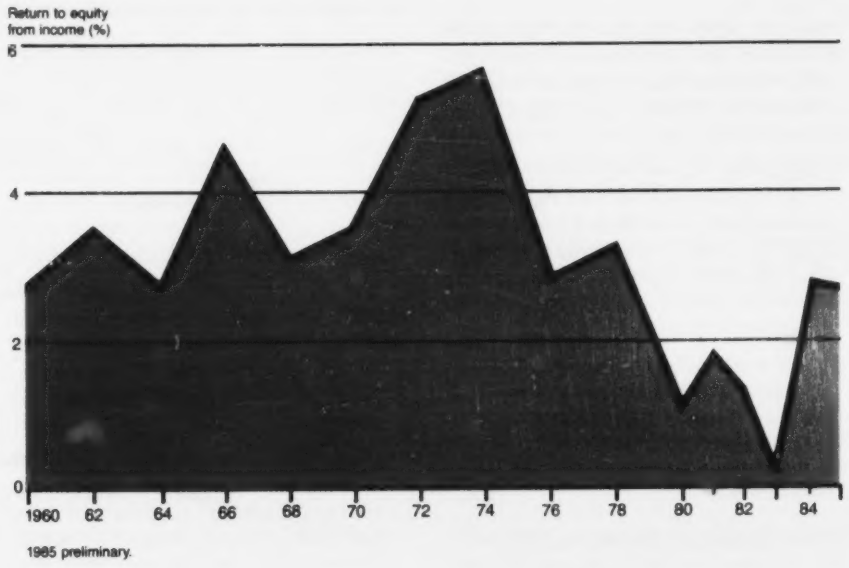
. . . but the adjustments hold promise for those who are not overburdened by debt and for those younger people who may eventually decide to enter farming.

"Farm financial stress," Meekhof adds, "reflects an inability of many farmers to service debt load from current earnings. These repayment problems have been made critical by a fundamental readjustment of asset values, resulting in an overall loss in owners' equity of around $270 billion since 1980. Because of this loss (primarily in land), their equity can no longer shield many farmers from their debt repayment problems. Cumulative losses in equity have put some farmers into technical insolvency, as land values have dropped below outstanding loan balances."

For farmers already in this situation—and 96 percent are not—the future doesn't hold much promise of relief, he says. But the adjustments now occurring do hold promise for those who are not overburdened by debt, for those who manage to get their debts under control, and for those younger people who may decide to enter farming. □

[Based on materials provided by economist Ron Meekhof of the Agriculture and Rural Economics Division, Economic Research Service.]

After Dropping Sharply, Returns to Investment in Farming Have Moved Nearer to Historical Levels



1985 preliminary.

Initiating Change in the Philippines

Filipinos are cutting back on sugar production because of declining domestic and foreign demand, especially from their largest customer — the United States. **Photo courtesy of World Bank.**

The new Philippine government inherited a nation beset with economic and agricultural problems that are begging for attention. Even though some recovery programs are underway, revitalizing the nation's struggling economy is a task that could take years to accomplish.

That's the assessment of economist Leslie Ross of USDA's Economic Research Service. It's too soon to tell, she says, how much the policies of Corazon Aquino will differ in practice from those of her predecessor, Ferdinand Marcos. What is clear, though, is that the new government has its work cut out for it—even if peace can be made with both the Communist-inspired insurgents and the factions still loyal to Marcos.

On the economic front, the problems include: a projected budget deficit that could total about $1.2 billion by the end of the year; a current annual inflation rate of about 23 percent; difficulty in attracting additional foreign credit and investment; low world prices and earnings for major Philippine exports; and declining real incomes for a poor, but growing, population of around 55 million.

Moveover, since 1984 the Philippine gross national product (a measure of the strength of the economy) has declined, in sharp contrast to the growing economies of most other Asian nations.

In agriculture, equally tough problems exist. These include a demand for land reform, low crop yields, a depressed livestock sector, and the need to keep retail food prices at affordable levels while providing price incentives necessary to encourage farmers to increase their productivity.

Finally, explains Ross, the weak economy has dampened the consumer's ability to buy higher valued agricultural products and reduced the country's ability to pay for imported production inputs needed by Filipino farmers.

Rapid Expansion, Mounting Debt

But not all of the nation's economic woes can be fixed on the previous government. To some extent, the Philippines was caught in the same economic expansion trap as other developing nations. It borrowed heavily in the favorable credit environment of the 1970's to finance roads, irrigation projects, and power plants.

But rising oil prices and interest rates, coupled with weaker markets for Philippine exports, helped turn a growing economy into a faltering one. In 3 years, the foreign debt nearly doubled, reaching about $25 billion in 1984.

Ultimately, a financial rescue package was worked out between Philippine authorities and the International Monetary Fund (IMF) —but not before unemployment averaged 15-20 percent and inflation climbed to around 40 percent.

Economic conditions, says Ross, were beginning to threaten the nation's political situation. In 1985, about 70 percent of the population—with an average annual income of about $600—was estimated to be living below the poverty line.

"Dealing with these underlying and unresolved problems will be the biggest challenge facing the new administration," predicts Ross. But for the Philippines, an island nation about the size of Nevada, economic progress—especially for the troubled manufacturing sector—will not come easy.

Foreign Debt Payments Account for a Large Portion of Philippine Export Earnings

* Includes goods and services.

Source: U.S. Bureau of the Census.

Declining Industrial Output

The nation's major industries are centered around processing and assembly operations. Key industrial exports include textiles, electronics, furniture, and processed wood products. However, since 1984 manufacturing output has fallen off. Some industries are in need of new or revitalized markets.

Ross notes that the nation's factories and assembly centers are currently operating below 50 percent of full capacity. Moreover, she says, the Philippine tax system has long protected some industries. The result has been some industrial inefficiency and a tendency to keep needed capital from reaching other sectors of the economy.

To help put the Philippines back on its feet financially, the Aquino government is concentrating on agriculture—the economy's largest employment generator—to lead the way.

About half of the country's workforce of 19 million is engaged in some type of farming or the marketing of farm products. In 1985, about 28 percent—$9 billion—of the gross national product of $32 billion was generated by agriculture.

The Philippines has about 12 million acres of farmland. Its major food crops are rice and corn. Secondary food crops include coconuts, cassava, onions, beans, bananas, and mangoes.

Last year, Filipino farmers harvested around 40 million tons of food crops, including about 5 million tons of milled rice and 3 million of corn. But, in recent years, the country has imported rice because of bad weather and inadequate producer price incentives. Most farmers are in need of increased credit, technical assistance, better market channels, and fertilizer.

To help pay for these improvements, the new government needs to encourage agricultural investment, expand production of both food and cash crops, and refinance its foreign debt, says Ross.

Commercial Crop Expansion
While specifics have yet to be announced, the Aquino government says it plans to develop new cash crops that will add to the country's export earnings. Palm oil and tropical fruits are some possibilities.

Currently, the Philippines exports sugar and is the world's leading exporter of coconuts. Other leading farm exports include pineapple products, bananas, tobacco, coffee, and lumber. Last year, the total value of the nation's commercial crop exports was $1.2 billion, including $556 million for coconuts and $190 million for sugar.

Agricultural exports made up about one-fourth of the total Philippine export earnings of about $4.6 billion. However, notes Ross, the country has an immediate and important need for new foreign markets—namely, for coconuts and sugar.

Recently, low world prices and a world glut of vegetable oils have hampered Philippine coconut exports. Though the nation's copra output rebounded significantly from a weather-damaged 1984 crop and totaled about 1.9 million tons last year, the price of coconut oil—the most valuable of coconut byproducts—dropped from a 1984 peak of about $1,400 per ton to $395 by the end of 1985.

According to Ross, the nation's sugar industry also remains in turmoil. Sugar production is projected to total about 1.4 million tons in 1985/86, down 21 percent from the 1984/85 total of 1.8 million tons. Producers are cutting back because of declining domestic and foreign demand, especially from their largest customer—the United States.

Last year, Philippine exports to the United States totaled about $1.6 billion, including $455 million worth of agricultural goods.

But recently the United States has been buying less. Philippine sugar exports to the United States amounted to about 315,000 tons in 1985, down from 367,000 tons in 1984. Coconut oil exports were about 311,000 tons in 1985, compared with 316,000 tons in 1984.

"If the Philippines is hoping to use its traditionally strong agricultural base as a means to improve the economy," she notes, "new government policies must be formed that will help promote exports."

The current debt crisis will dominate overall Philippine policymaking for years to come.

A Rural Environment
About two-thirds of Filipinos live in a rural environment—an important reason why the Aquino administration wants to make agriculture a cornerstone for its economic recovery plans.

But the farm sector has long been hampered by a lack of capital, a need for land reform, and monopolies in the sugar and coconut industries.

In 1984/85, the Marcos government began to deal with some of these problems by shifting agricultural policy from an emphasis on maintaining low consumer prices to one of stimulating domestic production. Retail price ceilings were removed from rice, chickens, eggs, and pork. Moreover, corn self-sufficiency plans had been underway since the early 1980's. The plan's aim was to curb imports of corn and other feed grains.

According to Ross, the new government has stepped back from many of the previous administration's policies. However, it has adopted a policy of limiting corn and rice imports in order to support local farmers.

This policy, she notes, will not severely affect U.S. farm exports to the Philippines. Last year, U.S. farm sales amounted to $292 million, down from $318 million in 1984.

Still, "even if revised agricultural policies can provide some relief, the current debt crisis will dominate overall Philippine policymaking for years to come," says Ross.

New Investment Critical
The key to sustained economic growth, she suggests, lies in the Aquino administration's ability to attract additional credit and encourage domestic and foreign investment. In the past, many investors shifted their money abroad because of the unstable political environment.

To bring this capital back into the country and create a more conducive atmosphere for foreign investment, she notes that a sound political and economic base must be restored.

The Philippine economy could grow about 2 percent in 1986. But this growth depends in part on the outcome of the new government's ability to negotiate a revised standby agreement with the IMF. A new agreement could result in the release of about $580 million in frozen loan money and new credit from commercial banks.

Moreover, the Aquino government hopes to obtain more foreign aid from the nation's top three contributors—the United States, Japan, and Australia. But the outlook for this is mixed. Though military and economic aid from the United States totaled about $1 billion in 1985, budget concerns have made additional aid unlikely.

Ross notes that so far the Aquino government has received strong support from the Philippine business community and some international lenders because of efforts to create a favorable business environment. Many banks and corporations previously owned by the government are being sold, and a breakup of the sugar and coconut monopolies is underway.

But sustained economic growth probably won't happen until the foreign debt crisis is checked, interest rates are lowered, and inflation goes down.

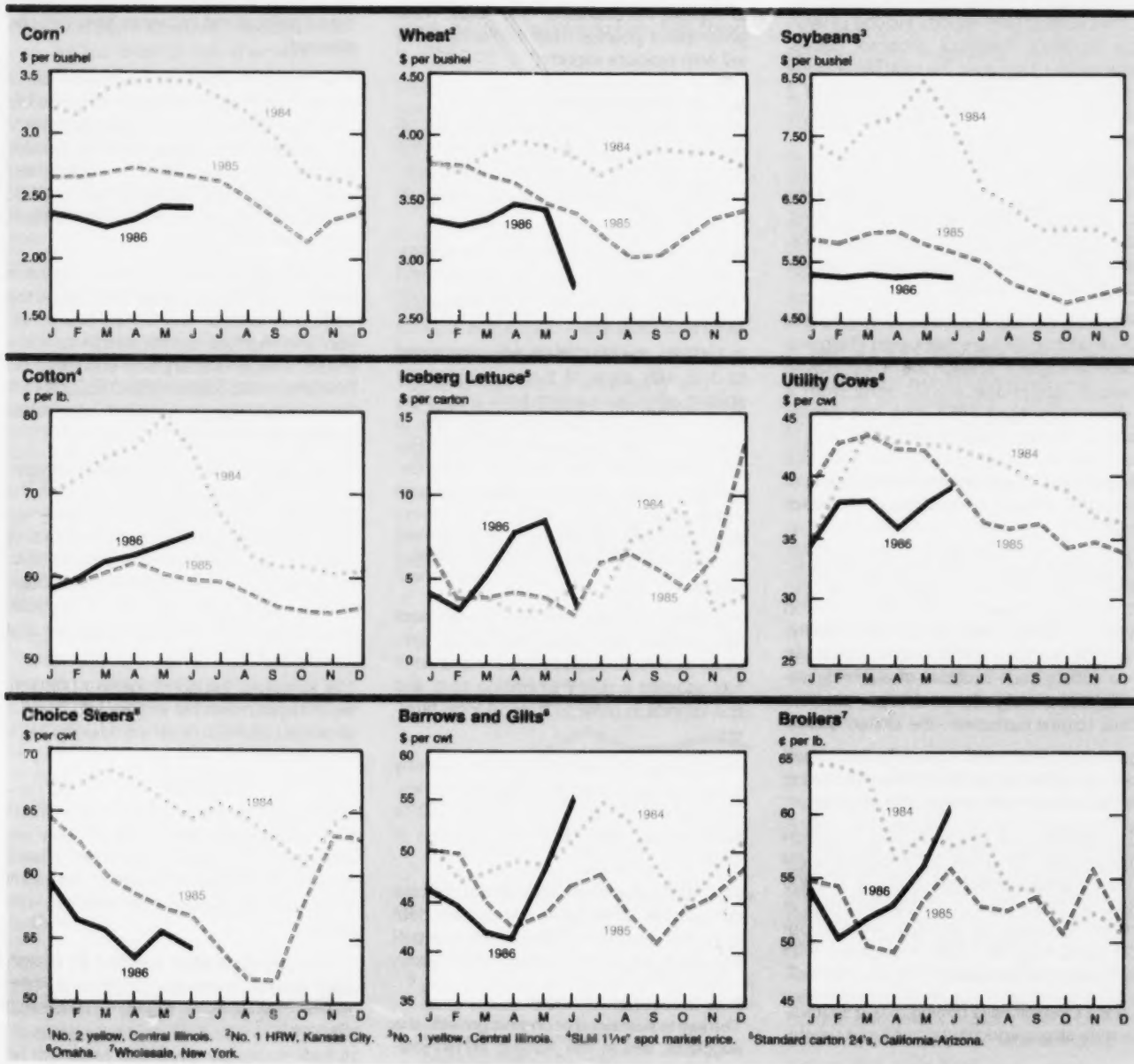
"The new government has moved cautiously to initiate change during its limited time in office, but overall policy goals are still being developed," says Ross. "Some reform is underway, but political conditions must stabilize before real progress can begin." □

[Based on information supplied by economist Leslie Ross of the International Economics Division, Economic Research Service.]

FARMLINE TRENDS

Monthly Price Monitor

USDA's June index of farm prices declined 1.6% and was 6.2% below its year-earlier level. Corn and soybean prices were down slightly, while wheat dropped 62¢ to a weak $2.78 per bushel — the lowest price in many years. Cotton continued climbing, averaging above 65¢ a pound in June — the highest since July 1984. Lettuce dropped $5 from May to June to $3.51 per carton. In the meat animals area, utility cows rose to $38.81 per cwt, and choice steers declined to $54.42. Barrows and gilts shot up to $55.58, the highest since February 1983. Broiler prices topped 60¢ per pound for the first time since March 1984. All prices shown are monthly averages.

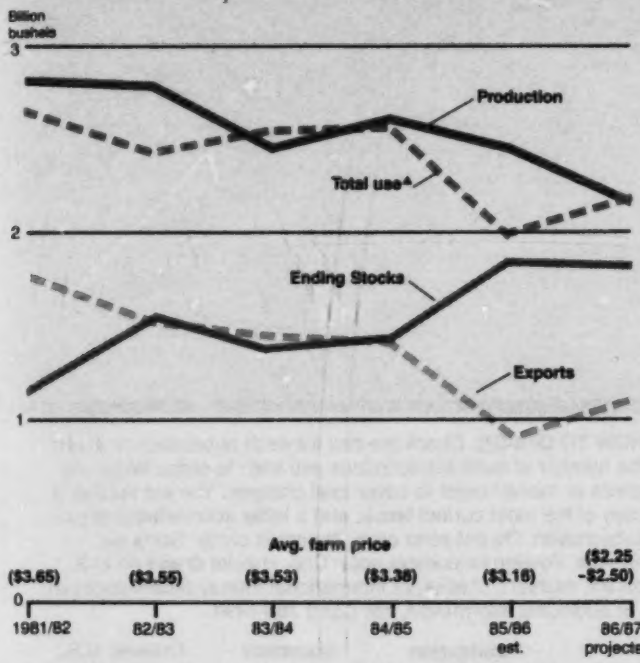


[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1 1/16" spot market price. [5]Standard carton 24's, California-Arizona. [6]Omaha. [7]Wholesale, New York.

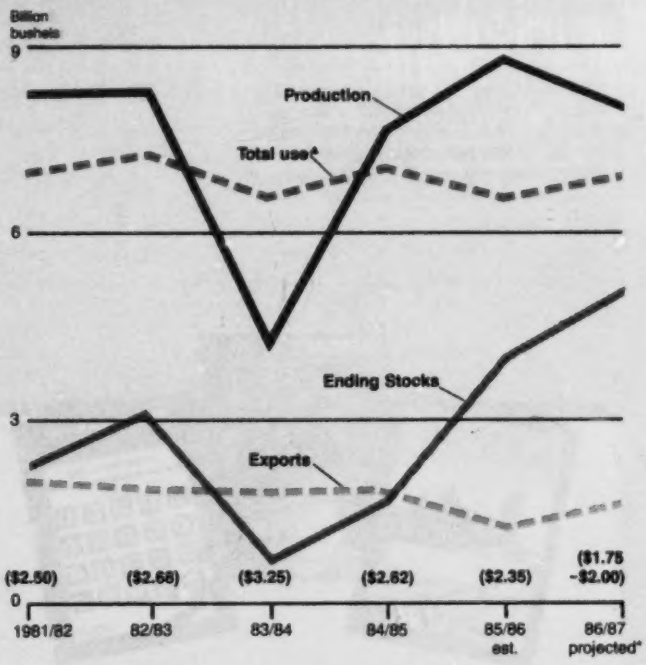
Crop Watch

Preliminary Outlook for the 1986/87 Season: Smaller U.S. Production and a Pickup in Export Volume, But Lower Farm Prices and a Further Buildup in Corn Stocks

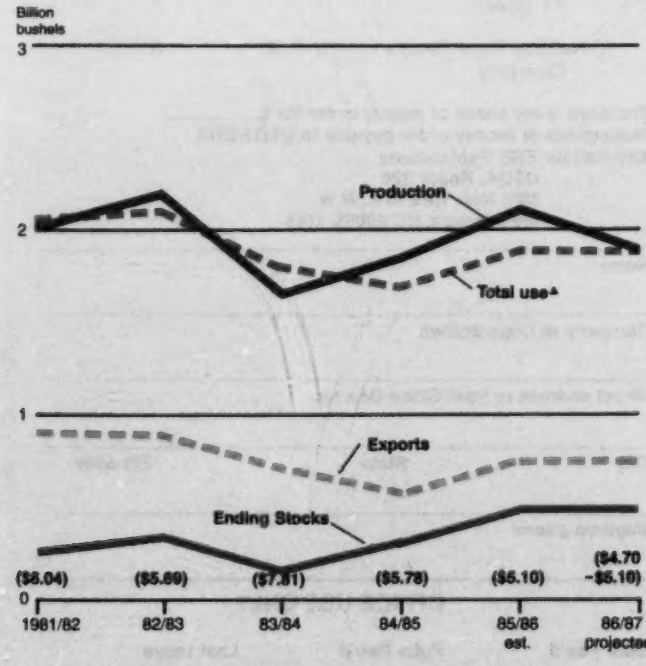
U.S. Wheat



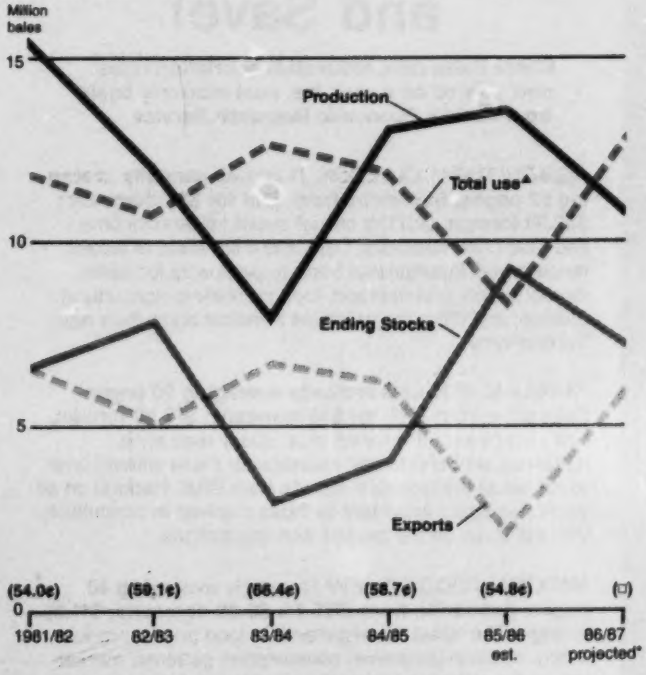
U.S. Corn



U.S. Soybeans



U.S. Cotton



▲ Total use includes domestic use and exports. Dollars per bushel for wheat, corn and soybeans; cents per pound for cotton. *Tentative USDA projections for the 1986/87 season as of early July 1986. Projections are revised monthly. □USDA is prohibited from publishing cotton price projections.

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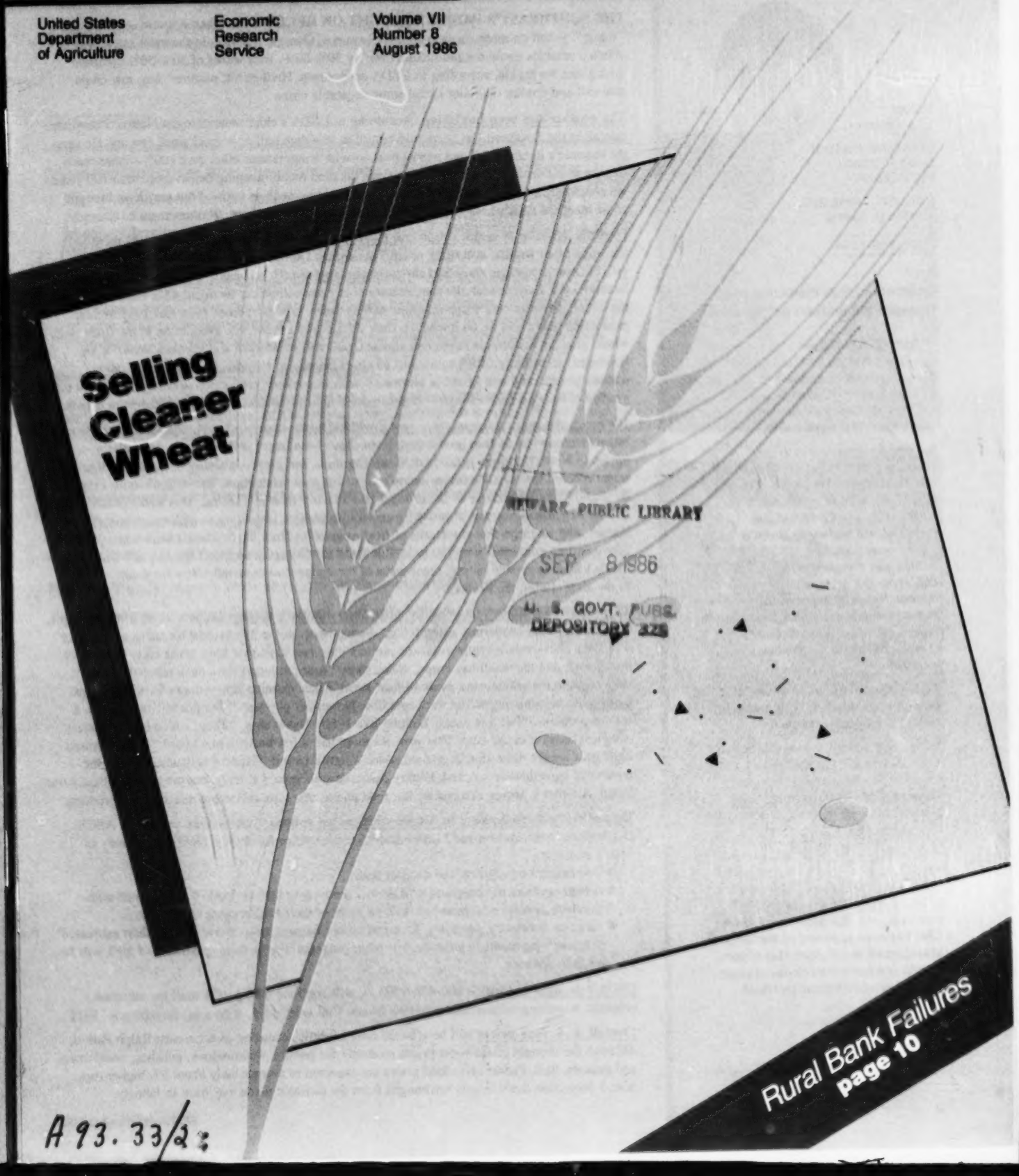

Selling Cleaner Wheat

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PERSPECTIVES

THE SOUTHEAST'S WORST DROUGHT ON RECORD has taken a severe — some say "tragic" — toll on many farmers from Delaware to Georgia. Farmers in the most seriously affected counties could see production drop by 50%-80%, with losses of 30%-50% common throughout the region, according to USDA economists. Hardest hit: pastures, hay, row crops, cow-calf and poultry operations, and some vegetable crops.

The weather has been punishing. According to USDA's chief meteorologist Norton Strommen, rainfall in the Southeast has been only a third to less than half of normal since January. He says the summer's light rainfall and record heat — with temperatures often over 100° — have made this the worst drought to hit the region since detailed record-keeping began more than 100 years ago. Mid-August rains came too late for some crops — such as corn — but may have brought some relief for soybeans and cotton. Still, yields will be way down, Strommen says.

Plentiful supplies of major crops will mask the Southeast's misfortune. Farmers there have the worst of all worlds, according to ERS economist Don Seaborg. "They don't have much to sell, but everybody else (here and abroad) has plenty to sell, especially in grains and oilseeds," Seaborg says. Even though the southeastern corn crop will be cut by about 45% this season, and the cotton, soybean, and sorghum crops will be down 35%-60% from 1984 and 1985 average production, there will be no impact on the nation's crop production. Production in the Corn Belt, where growing conditions have been almost ideal, will offset corn and soybean losses in the Southeast, according to ERS economist Michael Hanthorn. He adds that the impact on the nation's peanut crop will be more serious — with nationwide production down by 18% from the average of the past two seasons — because the Southeast accounts for 85% of the peanut crop.

It's much the same story in other commodities: heavy losses in the Southeast, but a minimal impact nationwide. In fruit production, losses have been heavy in three states particularly — apples in North Carolina, peaches in South Carolina, and grapes in Georgia — but together these states account for only 4% of the nation's noncitrus fruit production. The nation's apple crop will be slightly smaller because of the drought and an early frost this spring. This year's peach crop will be larger than last year's, but the fruit will be smaller, according to ERS economist Shannon Hamm. She also says that shipments of fresh vegetables from the Southeast were down 7% this June and July compared with last year. But since the Southeast accounts for only 2% of the nation's fresh vegetable output, other areas of the country — especially New England — can fill in the slack during the summer.

There may be a slight reduction in cattle herd numbers nationwide as a result of the drought, according to ERS economist Allen Baker, mainly because the five hardest hit states account for 9% of the beef cattle inventory. "Some farmers have had to market their cattle early because of poor forage and the small hay crop," Baker says. "And producers have been reluctant to ship hogs because the animals are prone to heat stress. Since extreme heat reduces fertility in hogs, there could be some impact on the September-November pig crop." For poultry, heat is also a serious problem, "but this year is nothing like 1980" Baker says. "Then, whole broiler houses were lost because of the heat. This year, it's more like a few broilers in a house." Heat-stressed birds gain weight more slowly, and slaughter weights decline. Extreme heat also reduces the number of eggs that are hatched. Poultry prices have increased sharply, but the drought is only one factor. Another is strong demand by fast food chains that have rolled out new chicken products.

Help is available to farmers in disaster-designated counties. Check with your local ASCS (Agricultural Stabilization and Conservation Service) office for details. Here's a summary of what's available:

- Low interest emergency and disaster loans.
- A feed cost-sharing program. USDA will share up to half the cost of buying feed with livestock farmers who have lost 40% or more of their feed because of the drought.
- Advance deficiency payments. Rice and cotton farmers may receive 40% of their estimated deficiency payments in advance. For other program crop farmers, payments of 50% will be made in advance.

USDA's drought hotline — 800-433-0703 — will continue taking calls until the situation subsides, according to coordinator Vivian Mann. Call weekdays, 8:00 a.m. to 6:00 p.m. EDT.

Overall, U.S. food prices will be affected only slightly, according to economist Ralph Parlett, although the drought could boost prices modestly for poultry, watermelons, peaches, sweet corn, and peanuts. Still, Parlett says, food prices are expected to average only about 3% higher this year, a projection that's largely unchanged from the estimate made way back in January.

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Falling exports and foreign complaints over U.S. wheat quality have prompted a proposal to more precisely measure the chaff, dust, and other non-millable material in wheat. Cleaning out the "dockage" should make U.S. wheat more attractive to our customers, but someone may have to foot the bill.

Why Smokeless Tobacco's Comeback May Burn Out *by Sherrie Biernacki* 8

Smokeless tobacco, frequently associated with baseball players or 19th century saloons, has made something of a comeback in the late 20th century. But the comeback is being challenged by health concerns, warning labels, and excise taxes.

How Healthy Are Rural Banks? *by Ellen Banker* 10

Although the farm financial crisis has hurt many rural banks, the sector as a whole is still in sound financial shape. USDA economists examine the current structure and financial condition of the commercial banking systems that serve rural America.

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Giving Foreign Buyers What They Want: Cleaner U.S. Wheat

Sluicing down a chute into the cargo hold of a ship bound for an overseas port, it looks to the naked eye like pure golden grain.

But sifted by hand, the wheat kernels sometimes reveal the presence of chaff, dust, and other materials that aren't millable.

More and more, it seems, foreign buyers of American wheat are asking: Has the United States lost its touch in supplying clean, high-quality wheat to world markets?

The concern—spurred by falling U.S. wheat exports and complaints by importing countries—has prompted action by the federal agency that inspects wheat before it can be exported. This spring, USDA's Federal Grain Inspection Service (FGIS) proposed more precise measurement of the non-millable material that can be easily removed (primarily the dust and chaff, collectively called "dockage").

Foreign purchasers normally pay only for millable material, meaning that dockage is deducted from the weight of the wheat that must be paid for. Tightening the reporting procedures—so that buyers have a better measure of dockage—might have the practical effect of pushing exporters to ship a 'cleaner product.

Current USDA grain standards permit almost half a percent of dockage to go unreported on the export certificate, which tells the buyer the quality and condition of the wheat. A shipment of export wheat can have as much as 0.49 percent dockage and still be certified as dockage-free. It can have as much as 0.99 percent dockage and be certified at 0.5 percent.

When the wheat reaches its destination at some foreign port or flour mill, the buyer may find more dockage than is stated on the export certificate, and possibly more than the buyer is willing to accept.

"Clean wheat is essential for certain food uses," says economist Mack Leath of USDA's Economic Research Service. "Moreover, the buyer pays for the extra weight of the undisclosed dockage not only in the initial purchase but also in freight charges, import levies, and other costs based on tonnage."

Digging Out Dockage

The FGIS proposal, published May 30, 1986, in the *Federal Register,* would require that dockage be reported to the nearest 0.1 percent (one-tenth of 1 percent). According to FGIS officials, "certifying dockage to the nearest 0.1 percent is more precise than the current method and should enhance the marketability of U.S. wheat."

In the proposal, FGIS officials make special note of the benefit this change should bring to the export of U.S. wheat: "Elimination of the problem of understated dockage would strengthen credibility of the official inspection certificate, enhance buyer confidence in the U.S. standards for wheat, and strengthen the competitive position of U.S. wheat in the world market."

They go on to suggest that confidence in U.S. wheat standards has fallen in importing countries.

"Many foreign buyers question the adequacy of the current dockage certification method, asserting that the actual dockage is almost always understated." In current practice, export shipments certified with "no dockage generally contain 0.35 to 0.45 percent dockage. Export shipments certificated at 0.5 percent dockage generally contain 0.6 to 0.9 percent dockage."

The comment period on the FGIS proposal ended July 14. FGIS officials say the proposed rule may become final by May 1987, just before the June 1 start of the next wheat crop year.

Changing the way dockage is measured may be a start, but the FGIS proposal still can't answer all the questions it raises about the costs of extra cleaning, and old concerns over dockage itself. To begin with, the economic effect of the proposal—should it be adopted as it stands—would likely be felt almost immediately on the price of a bushel of wheat.

Higher Prices?

"Dockage certified to the nearest 0.1 percent could affect price per bushel, but the

Grain Glut Adds Force and Volume to Buyers' Complaints

John Pitchford, an FGIS official who monitors international grain trade, says foreign concerns over U.S. grain exports are apparently becoming more widespread.

"These are not only complaints about dockage in wheat. They cover all grains, including corn and soybeans, and all aspects of grain—dockage, certainly, but foreign material, too, and damaged kernels." The number of such complaints received directly by FGIS jumped from 22 in fiscal 1984 to 71 in fiscal 1985.

Pitchford says the reasons for the foreign criticism flow partly from the "price and the strength of the dollar. It's a buyer's market, and foreign buyers are saying, 'I want better quality because I can go to Canada and Argentina and get better quality or the same quality for a lower price.'"

Foreign Complaints Over Grain Quality and Dockage in U.S. Wheat Rose Substantially in Fiscal 1985

	Total quality complaints[1]	Complaints about wheat	Complaints on wheat dockage
1977	20	11	0
1978	21	9	2
1979	27	12	2
1980	38	13	2
1981	17	8	2
1982	12	6	1
1983	13	7	0
1984	22	6	0
1985	71	19	5

[1]Complaints about U.S. wheat, corn, other grains, and soybean export quality.

Fiscal year data are from USDA's Federal Grain Inspection Service and reflect only those complaints reported to U.S. embassies. Not included are complaints made to shippers and trade associations by foreign purchasers.

effect depends on how market participants view the price quotations for wheat in relation to the certified dockage content," says economist Leath. Leath was commissioned by FGIS to analyze how the value of wheat might change if dockage regulations were revised.

"The total value of a particular crop would not change significantly," says Leath. "The amount paid for wheat with higher dockage levels would probably drop because the dockage would be reported and, thus, deducted from the weight of the lot. On the other hand, market price quotations for clean wheat would generally increase, offsetting the reduced value of the not-so-clean wheat."

The major question posed by the FGIS proposal, however, is: Who pays for the cleaning? And that relates directly to the other, older concern of who's responsible for dockage in the first place.

Is it the farmer, who has the natural problem of weed seeds and other chaff ending up among the wheat kernels sent to and stored in the grain elevator?

Or does the local elevator operator play a greater role, perhaps by allowing high-dockage lots to enter the marketing channel?

Is it the export companies that are at fault as they blend wheat lots with different dockage levels to create a uniform export product?

Finally, does part of the blame belong to U.S. surpluses and storage policies?

Although the responsibility within the U.S. marketing system is difficult to determine, the increased frequency of foreign complaints may have less to do with any recent erosion in U.S. grain quality than it has to do with the new realities of wheat trade in the 1980's.

A Buyer's Market

Simply put, nations that need wheat can afford to be, and are, more selective. A buyer's market has been born in the wake of world wheat supplies that are running very high. Added to that is the fact that other wheat producers—namely Australia, Canada, the European Community, and Argentina—have become aggressive competitors with U.S. wheat producers for global grain markets.

The growing chorus of complaints over dockage levels has risen at the same time that U.S. wheat exports have continued to decline.

Certainly, concern over the cleanliness of wheat bound for export had already prompted some hurried and heated debate among those who grow, store, and export wheat—even before the outlines of any federal recommendations or requirements became known.

The growing chorus of complaints over dockage levels—variously voiced in Japanese, Russian, Chinese, and Spanish—has risen at the same time that U.S. wheat exports have continued to decline. In 1984, U.S. wheat sales abroad totaled more than 1.4 billion bushels—far from their highest level. But last year exports dipped to 910 million bushels—reflecting a strong U.S. dollar and high prices for U.S. wheat, as well as greater competition from other wheat-exporting nations.

American wheat farmers have openly wondered whether quality is maintained by elevators that store wheat and traders who send it abroad. Elevator operators and exporters counter that the wheat leaving their hands is, in fact, often cleaner than when it leaves the farm.

FGIS officials say their inspections paint a mixed picture.

According to the agency's report on "U.S. Export Wheat Quality, 1985," export dockage levels were lower for some wheat classes than domestic dockage levels. In a couple of other classes, wheat was cleaner at some domestic inspection points than it was at export, signifying that the wheat was cleaner when it left the farm than when it left the export terminal.

The report states: "In 1985, export dockage levels were lower than dockage levels reported by state harvest surveys for hard red spring, durum, white wheat, and domestic truckload inspections for hard red winter, hard red spring, and white wheat. However, durum and soft red winter export dockage levels exceeded reported domestic trucklot levels."

Concerns have also emerged over the cleanliness and quality of U.S. corn and soybean exports, but most attention has centered on wheat, which is largely used by foreign purchasers for human consumption. FGIS officials are currently conducting public hearings to explore ways of cleaning up corn and soybean shipments. (FGIS recently announced stricter standards to control damage in soybeans, a separate but related issue also cited as a problem by foreign buyers.)

A Common Interest

Economist Leath says farmers, elevator operators, and exporters all share a common economic interest in cleaning up wheat. And he says current practices by some members of these groups contribute to the dockage problem.

"Producers who deliver wheat with a higher-than-average dockage content are subsidized by producers who deliver clean wheat to elevators that purchase on a station-average basis," says Leath. "Elevator operators could more often employ the use of screener devices or aspirator machines

which remove the dust, chaff, and insect fragments from the wheat kernels."

Exporters, of course, are the last, and most important link in the connection that ties the American farmer to the foreign consumer, says Leath.

"The free allowance for dockage under the current standards provides handlers with an incentive to blend high dockage lots with clean wheat lots," he says. "Clean wheat is an excellent raw material to use in blending to reduce the dockage content of high dockage lots."

He notes that a lot with 0.9 percent of dockage can be mixed with an equal size lot of clean wheat to yield a combined lot with an average dockage content of 0.45 percent. The combined lot would be certified as dockage-free. "Although this is a legitimate and common practice under current standards, it would likely be curbed considerably if dockage is certified to 0.1 percent increments," he says.

For their part, U.S. exporters say their shipments meet the specifications set forth in federal government standards.

Cleaning at Country Elevators

Wherever the problem may lie, a solution is apparently needed. Leath says the country elevators storing the grain may be the least expensive places to remove the dockage.

His view is supported by a case study done at Kansas State University by economist Harvey Kiser. Kiser, an associate professor of agricultural economics, recently examined the costs of more stringent wheat cleaning at country elevators.

His conclusion: Cleaning with screeners and aspirators would add as much as 1 cent a bushel to the cost of handling wheat. In some years, he says, that cost could be absorbed by savings realized from lower transportation costs in shipping the cleaner wheat and income derived from selling the dockage as animal feed to neighboring farms.

In contrast, says Kiser, cleaning at the port terminal before loading onto ships would be vastly more expensive.

Reducing the dockage may help increase customer loyalty, but it won't boost exports overnight.

"In one case, that of the grain elevator, you're using small-scale equipment and dealing in far fewer bushels. In the other, you're dealing with much larger quantities and heavy costs for far more elaborate machinery," he says.

By his own conservative estimate, Kiser says the costs of cleaning wheat at port facilities—as the Canadians do, for example—range from operating costs of 10 cents a bushel to 25 cents a bushel for all costs, including new buildings and land.

"There are other problems, though," he adds. "Some of these export terminals simply don't have the land on which to construct extensive new cleaning facilities."

Country elevators might have some difficulties, too, he cautions.

"How low can you afford to take dockage

Dust, Chaff, Weed Seeds, and Insects

Wheat is graded and certified for export by teams of inspectors working for USDA's Federal Grain Inspection Service (FGIS).

The dust, wheat chaff, and insect fragments that come under the category of "dockage" in wheat shipments do not affect the quality grade of wheat. Instead, the dockage is specified in percentage terms on the export inspection certificate.

Foreign material, on the other hand, is considered a grade-determining factor.

Why the apparent contradiction, when both dockage and foreign material must be removed before milling?

According to FGIS regulations, dockage is defined as "all matter other than wheat which can be readily removed from a test portion of the original sample by use of an approved device." Dust, chaff, and insect fragments are easily separated from wheat kernels by devices that sift out or "vacuum" up material of different size and weight from the kernels.

Foreign material is a little tougher to take out. It consists of all matter other than wheat that remains in a test portion after removal of dockage and shrunken and broken kernels—usually weed seeds or kernels of rye or other grains that are roughly the same size and shape as wheat kernels.

The percentage of foreign material must be 1.0 percent or less for a wheat shipment to meet the two highest grades—U.S. No. 1 or No. 2 wheat.

Particularly prone to high dockage (and foreign material) levels are durum and hard red spring wheat, which are both planted in the spring and generally harvested during August and September.

"The later harvest dates mean weeds have had a chance to grow and mature," says ERS economist Mack Leath. "Moisture is also a problem with spring wheats, which are usually cut and placed in windrows to dry in the field prior to threshing. All material in the windrows, including weeds, is run through the combine later."

These problems give a boost to Canadian producers who compete with U.S. producers of durum and hard red spring wheats.

The Canadian Wheat Board, which oversees all wheat exports from that country, requires export grain to meet more exacting standards than the United States. Cleaning costs are assessed and passed on to producers. "Canadians are competing with our classes of wheat that generally have

FGIS Inspector Byron School demonstrates a procedure to measure chaff and other dockage in a wheat sample. After bulkier material is sorted out by machine, an inspector may hand sift the sample for additional dockage. The total is then weighed to determine the percentage of dockage in the wheat lot, and that amount is officially reported on the inspection certificate. *Photo by Allen Atwood, FGIS*

down before you're taking out too much wheat, in the form of shrunken and broken kernels that are not dockage and count as wheat," he says. "The cost of cleaning will be more than a cent a bushel if it means lost sales because some wheat has been removed along with the chaff."

Making up that "margin" for the elevators could mean lower prices paid to wheat producers, he says.

Kiser also says that expectations of farmers (and others) for improved wheat exports, once dockage is lowered, may be unrealistic.

"It's a mix of factors that influence the export market," he says. "How do you balance dockage with price, with credit, with competitors' subsidy programs?"

Lowering dockage will help, Kiser says, "but it won't boost exports overnight. What it will do is make happier customers who will be likely to stay with us longer." □

[Based primarily on information provided by economist Mack Leath of the National Economics Division, Economic Research Service, and Harvey Kiser, associate professor of agricultural economics, Kansas State University.]

higher dockage and foreign material levels."

Dockage is decried for another reason: Together with temperature and moisture, it has a direct link to insect infestation. That can create an extra export problem.

"Dockage greatly enhances the capacity of certain insects to develop and reproduce in stored wheat because dust and chaff serve as a food supply," says Leath. "Since dockage creates a favorable environment for insects, cleaning wheat prior to storage would be one means of controlling certain insects."

FGIS does not inspect wheat arriving at foreign destinations. Any deterioration in wheat quality during the trip abroad—from the spread of insects, for example—would thus be missed.

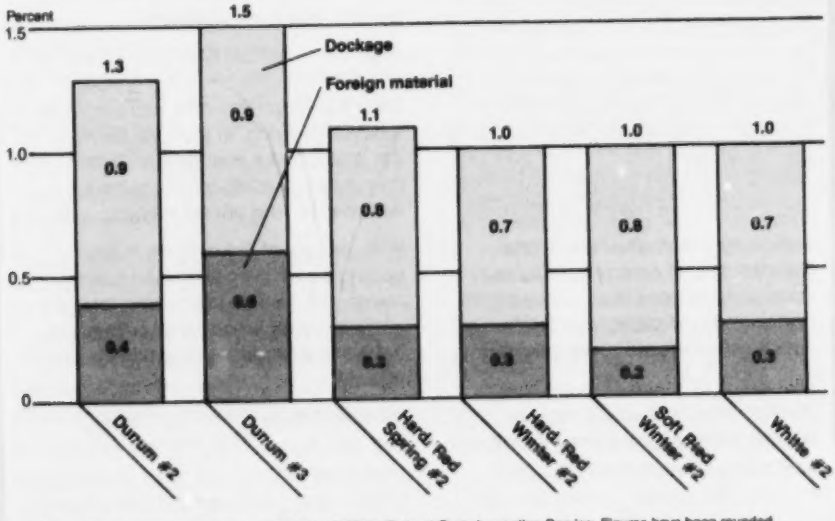
But FGIS officials say their inspections here show U.S. wheat export quality to be good—and getting better.

In 1984, FGIS says, 95 percent of the 1.4-billion-plus bushels of wheat exported received the highest grades, U.S. No. 2 or better. Last year, 96 percent of the 910 million bushels of wheat inspected for export was graded U.S. No. 2 or better. Most foreign buyers of U.S. wheat request the U.S. No. 2 grade, except durum buyers who ask for U.S. No. 2 or 3.

The average dockage for all classes of U.S. wheat exported in 1985 was 0.7 percent. The average foreign material and dockage combined for all classes was 1.0 percent, equal to the maximum foreign material allowed for U.S. No. 2 wheat. By class, hard red spring and durum wheat exceeded the 1.0-percent level when dockage and foreign material were counted jointly.

Even though they produce for a relatively small portion of the overall wheat market, durum producers may have reason to be especially concerned about wheat export quality. The majority of their production over the past 3 years, an average of 59 percent, has been channeled into export markets. Only producers of white wheat have a higher export percentage of production (64 percent) over the last 3 years.

By Class, Durum and Hard Red Spring Wheats Had the Highest Export Levels of Dockage and Foreign Material Combined in 1985*



*Figures from export inspections conducted by USDA's Federal Grain Inspection Service. Figures have been rounded.

Why Smokeless Tobacco's Comeback May Burn Out

Beginning in February 1987, all these products will have to carry warning labels.

Smokeless tobacco, frequently associated with baseball players or 19th century saloons, has made something of a comeback in the last few years. Its consumption is being encouraged by the tobacco industry, which has been forced to find new markets for its products because of declining cigarette sales. Also, the number of smokeless tobacco users, especially among young males, is on the rise.

The renewed popularity of smokeless tobacco may be due to three reasons," says Verner Grise, tobacco analyst with USDA's Economic Research Service. "First, the industry has made a major effort in advertising its smokeless products. Second, more and more workplaces are banning smoking, so smokeless tobacco becomes a possible alternative. And a third reason could be that people are switching from cigarettes to smokeless tobacco because they perceive it as being less of a health risk."

Before the 1920's, smokeless tobacco products were readily accepted by Americans. In fact, during one point in the 1800's, "chewing" was considered a national pastime. All that changed, however, when the public spitting associated with smokeless tobacco started being viewed as unsanitary and antisocial.

According to Grise, use of smokeless tobacco fell from an average of about 5½ pounds per person in the late 1920's to a low of about 1½ pounds in the late 1960's. Use started rising again in the mid 1970's, peaking at about 2 ¼ pounds in 1980. Since then, use has fallen slightly but has remained above the 1960's low.

All the recent gains in in chewing tobacco, while the snuff market has grown, have been. Employment is down in some industries where chewing tobacco is typically used, such as heavy manufacturing. This may have contributed to the drop.

The recent rise in the use of smokeless tobacco is being cited by [illegible] as having [illegible] nothing [illegible] and has been [illegible]

The Spectre of Health Concerns

[illegible] tobacco [illegible] has [illegible] health [illegible] has [illegible] young men, has some health officials concerned.

More teenage and young adult males have been using smokeless tobacco during the last few years. According to a survey by the HHS Office on Smoking and Health, 3 percent of American males 16 to 19 years of age and 4 percent of men in their 20's chewed tobacco in 1985, compared with 1970 statistics of 1 percent of the teenagers and about 2 percent of the young men. About 3 percent of both the teenagers and young men used snuff last year, compared with less than 1 percent in 1970.

"Peer pressure is a big factor in smokeless tobacco use among young males," says Tim Hensley of the Office on Smoking and Health. "It seems to be the thing to do. Advertising does carry some weight with young people."

The concern about the popularity of smokeless tobacco among young people stems from studies which link its use to [illegible] cancer of the gum and mouth, and to some addiction.

While Surgeon General [illegible] has [illegible] grow with additional research, the tobacco industry sees his statements as a rush to judgment. The Smokeless Tobacco Council views the studies on which the surgeon general based his report as insufficient. The council sees a need for more independent research to answer questions concerning smokeless tobacco and cancer.

While the debate continues, Congress has taken some steps, passing the Comprehensive Smokeless Tobacco Health Education Act of 1986 on February 27. The act requires that warning labels be placed

A Leaf from the Pages of History

Chewing was probably one of the earliest uses of the tobacco plant. Primitive man probably taste-tested the plant and found that it helped quench thirst and ward off hunger—two important benefits in a hostile environment.

Early explorers to the New World reported seeing American Indians chewing tobacco. These explorers, in turn, introduced tobacco to Europe in both its smoked and smokeless forms.

During the 17th and 18th centuries, chewing snuff was all the rage in Europe and the American colonies, particularly among aristocrats. However, chewing tobacco was never popular with the Europeans.

After the American Revolution, the colonists rejected snuff along with other European customs and turned to tobacco chewing. In the 19th century, the spittoon was everywhere, from courts and legislative halls to bars, restaurants, and private homes.

With the turn of the century, public spitting was proven to spread tuberculosis, so the use of chewing tobacco came to be regarded as an unsanitary habit and it gradually tapered off—until recently.

Whether health concerns, new legislation, and the persistent research on smokeless tobacco will drive chewing tobacco and snuff back into the pages of history remains to be seen.

on smokeless tobacco containers and in printed advertisements beginning February 1987. The labels, which are to appear on a rotating basis, are:

1. This product may cause oral cancer.
2. This product may cause gum disease and tooth loss.
3. This product is not a safe alternative to cigarettes.

However, the law bans television and radio advertising of smokeless tobacco products. It also requires that the Secretary of Health and Human Services conduct public education programs on the dangers of using smokeless tobacco.

Taxes May Be Biggest Blow

On top of the surgeon general's report and congressional legislation, the smokeless tobacco industry may face an even tougher restraint on sales: new taxes.

On April 7, 1986, Congress passed the first federal excise tax on smokeless tobacco products since the tax was abolished in 1966. Since July 1, 1986, snuff has been taxed at 24 cents a pound and chewing tobacco at 8 cents a pound. In terms of tax per container, this comes out to 1.5 cents for 1 ounce of snuff or 3 ounces of chewing tobacco.

Also, the number of states that tax smokeless tobacco has been increasing. In 1985, 20 states taxed some form of smokeless tobacco. In the 1920's, not a single state levied a tax on any form of smokeless tobacco.

Taxes, according to Grise, could take a toll on smokeless tobacco use.

"Many times, taxes are more effective than health campaigns in reducing tobacco use," he says. "Because of taxes and health campaigns, any future increases in smokeless tobacco use will probably be smaller over the next few years. Much depends on the amount of publicity surrounding health concerns."

(Based largely on information provided by economist Verner Grise of the National Economics Division, Economic Research Service.)

Tobacco Names and Numbers

Just as you sometimes need a scorecard to tell baseball players apart, you need a "scorecard" to tell the difference between types and classifications of smokeless tobacco.

Smokeless tobacco is divided into two products: snuff and chewing tobacco. Snuff is rarely inhaled through the nose as it once was, but is now placed between the cheek and gum and left there unchewed.

Chewing tobacco tends to be coarser than snuff, although some snuff closely resembles chewing tobacco. It would take an expert to tell the difference.

Chewing tobacco is mixed with flavorings, such as sugar, honey, or licorice, and comes in three forms: plug, twist, and loose leaf. Plug gets its name from an old method of preparation that involved "plugging" honey-soaked tobacco into holes drilled in logs and leaving the tobacco to cure. Twist gets its name from the shape of tobacco that is twisted into braids.

Loose leaf, originally called scrap, came into being with machine-threshed tobacco. In the process of removing the leaf from the stem (threshing), usable tobacco fragments remain that can be incorporated into loose leaf chewing tobacco.

Loose leaf is the most widely produced form of chewing tobacco. About 74 million pounds of loose leaf chewing tobacco were manufactured in 1985, compared with about 11½ million of plug and 1½ million of twist.

Snuff has two forms. Dry snuff is pulverized tobacco, usually unflavored or unscented. Moist snuff is coarser, cut rather than pulverized. Flavorings or scents, such as licorice, clove, or cinnamon, are usually mixed into the tobacco.

The moist snuff led the market with about 40 million pounds produced in 1985. Dry snuff production, about 9 million pounds, is less than a fourth of the moist forms total.

Chewing tobacco is almost exclusively a male product, but some women do use snuff, particularly the traditional dry variety.

Interestingly, snuff in some areas of the country, particularly the south, has traditionally been as much a women's product as a man's. Early tobacco product labels often showed women enjoying the snuff they used to offer visitors. Snuff using grandmothers would decorate their gardens by chewing tobacco or sniffing.

How Healthy Are Rural Banks?

Commercial banks provide credit and financial services in all communities, but they are especially important in rural areas. The main reason, according to USDA economists, is that a county's commercial bank may be one of only a few privately owned businesses that keep track of local economic trends.

Over 60% of 1985's ag bank failures occurred in the Corn Belt and the Plains states.

Because they do business with area farmers, ranchers, and agribusinesses, rural banks are also a key source of information for outside investors looking for opportunities in rural areas. The two researchers pointed out that the commercial banking system is the only financial institution that covers all rural America. They found that although the farm financial crisis has hurt many rural banks, the sector as a whole is still in sound financial shape.

There are, however, wide variations in this picture of health. Some areas, particularly heavily agricultural ones such as the Corn Belt and Plains states, have been harder hit with commercial bank failures than other areas of the country.

"Rural and agricultural bank failures have increased dramatically in the last 3 years," Milkove says. Together, rural and agricultural banks comprised 85 of the 118 commercial bank failures in 1985. Over 60 percent of these failures occurred in the Corn Belt and the Plains states, according to economist Greg Gajewski, also of the Economic Research Service.

The numbers are in sharp contrast with 1981, when just seven banks failed, but the failure rate is still relatively small, Milkove says. Last year's 118 failures accounted for less than 1 percent of the approximately 14,000 commercial banks in the country of which about 7,900 are rural, including roughly 5,000 agricultural banks. (Most ag banks are also classified as rural.)

Rural banks are those which are headquartered in nonmetropolitan areas. But rural plays a bank into an ag classification is a bit trickier. The Federal Reserve Board (FRB) classifies a bank as agricultural if the concentration of its loans in ag loans is above the simple average of such ratios at all banks. For 1985, according to Financial Method. For agricultural banks as a group, farm loans currently constitute 35.7 percent of total loans, far above the 9.3 percent average in the banking system as a whole.

Because the U.S. farming area is large and the farm sector is so diverse, many of the economic problems affecting farmers have not affected all agricultural lenders alike.

Faded Fortunes

The primary causes of financial stress in the farm sector have been pinpointed by economists: falling commodity prices, sagging exports, and a strong U.S. dollar overseas.

"All the problems become significantly worse," Mikesell says, "when you consider the steep drop in farmland values, especially in the Midwest. This means that the collateral a farmer has to put up for a loan is getting smaller and smaller. In short, many farmers are simply losing their borrowing power." And this is one farm problem that isn't likely to make an abrupt change in direction anytime soon. "It's a fundamental downward adjustment of asset values," Mikesell explains.

As the value of farm loan collateral declines, and as more farmers fall behind on loan payments, he adds, banks must take steps to counteract the deteriorating quality of their loan portfolios.

When loan portfolios go bad, banks not only have to answer to stockholders and depositors, they also must contend with federal and state regulators. Regulators often require banks with loan-quality problems to increase their reserve funds in order to cover possible losses. The result: lower profits. That's when examiners look at banks' ability to raise capital. Many rural banks are small, family-owned businesses that have difficulty raising capital. Another problem is that many rural banks have a large portion of their assets in farm loans. Regulators often limit the amount of loans a bank can make to one borrower. Because of this, some rural banks may make fewer local loans, instead choosing to invest their funds in securities, or sell funds on the federal funds market.

The extent to which problems among agricultural banks (or any commercial bank) are transmitted to the local economy depends heavily on the structure of the local banking system, Sullivan says. Communities that are most likely to be affected are obviously those that are dependent upon farming as a source of employment and income.

But even in areas that are primarily agricultural, the local banking structure may cushion the impact of problems among agricultural banks if there is a mix of the types of banks that can provide financial services. "Those markets served by competitive, diversified banking structures are less likely to lose easy access to financial services. In markets served by only a few agricultural banks, the picture is less rosy," Sullivan says.

Alternatives to Ag Banks

In addition to local commercial banks, many rural communities are served by

Bank Failures: Steep Increases, Particularly for Agricultural Banks

	1981	1982	1983	1984	1985
All commercial banks	7	33	48	79	118
Rural banks	5	19	19	41	81
Agricultural banks	1	10	8	31	60

Compiled by Greg Gajewski of the Agriculture and Rural Economics Division, Economic Research Service

branches of urban-based banks, or by affiliates of statewide multibank holding companies (MBHC's). MBHC's are firms which own two or more locally separate banks that are headquartered elsewhere. The remainder were served by a mix of local and nonlocal bank organizations.

A look at the number of banks serving the credit needs of rural counties in 1983 revealed 36 percent of the nation's nonmetro counties were served by five or more bank firms, a sign of adequate diversification, according to the economists. At the other end of the spectrum, 29 percent were served by only one or two bank firms. The average number of banks serving nonmetro counties is four. The numbers are very different in urban America. Major metropolitan areas can have as many as 400 bank firms. The average number of banks serving metropolitan counties is 12.

tivity to the behavior of one or two in rural counties is not uncommon. If g banks tighten credit requirements, bank firms may follow suit, Mikesell Moreover, if a local bank fails, the ning banks may extend fewer loans so heir liquidity positions are improved, ey appear safe, Sullivan says.

nly does this leave many borrowers rable should a local bank fail, but it uts a damper on competition.

reater the number of banks, the more etition within the local market, but banking systems, particularly those g counties that are heavily dependent ming, may still be seriously affected al economic downturns. If most of a y's banks, no matter what their affilia- end heavily to local businesses and the system as a whole lacks the loan ification that is so important for sta- under unfavorable local economic ions, Milkove says.

3, 42 percent of rural counties were d by "self-contained" banking sys- (that is, headquartered within the

ling to USDA economist Jim ll. First, most rural banks are d in states that have unit banking nited-branch banking laws. And of these same states are heavily tural.

nd limited branch banking laws a bank's ability to open branch particularly outside the county h the bank is headquartered. branching is restricted, more g firms are needed to service an This tends to keep these rural fairly small, with total assets under $50 million.

sult, many of the banks simply e deposit base and loan d needed to become large, or nedium sized, Mikesell says. nce small banks usually service arkets, those in agricultural end to lend heavily to farmers. , they are agricultural banks.

Why Rural Banks Remain Small

Banks that are headquartered in rural America are different from those rooted in the urban areas of the country. Simply put, rural banks are more conservative. They tend to have lower loan-to-deposit ratios, higher profit rates, and relatively fewer long-term securities than urban-based banks. Rural banks also tend to sell their excess reserves on the federal funds market. And most of them are small.

In 1984, over 90 percent of all rural banks were independent, one-office operations. More than half were rural banks. This means they have more concentrations of farm loans in their loan portfolios.

Why do most rural banks remain small and why are many classified as agricultural banks? Two main reasons,

county with no intercounty branches, and by banks not affiliated with a multicounty MBHC). At the other extreme, 10 percent of rural counties were served only by banks headquartered elsewhere. The remainder were served by a mix of local and nonlocal bank organizations.

Arguments can be made for and against intercounty and interstate commercial bank branching, the economists say. It is probably best to have the option of purchasing financial services from either a local bank or the branch of a larger bank.

Local bankers may be in a better position to evaluate their customers' loan requests through first hand knowledge of the community. "Outsider" banks often reserve loan decisions for the "home office" that lacks knowledge of the local economic conditions.

On the other hand, larger bank institutions are likely to be more insulated from local market conditions. As a result, local economic downturns may affect the local lending behavior of larger banks less than they do small, independent banks.

In 1983, only 23 percent of rural counties (and 11 percent of farm-dependent counties) were served by a commercial bank with at least $500 million in assets. Nearly all of these were in states that allow statewide branching of commercial banks. In the Midwest, where restrictions on branching are common, MBHC's represent a type of "quasibranching."

If MBHC's with $500 million or more in assets are considered as equivalent to similarly sized banks, then 41 percent of rural counties (and 27 percent of farm-dependent counties) were served by a bank that is probably insulated from local economic conditions. These percentages are far below those of metropolitan counties where virtually all areas are served by at least one, and usually several, commercial banks that have $500 million or more in assets. □

[Based on information provided by economists Jim Mikesell, Dan Milkove, Pat Sullivan, and Greg Gajewski of the Agriculture and Rural Economics Division, Economic Research Service.]

Can We Recapture Our Trade Share?

U.S. agriculture's share of world grain trade dropped sharply in the 1985/86 season, notes economist Steve MacDonald of USDA's Economic Research Service.

Part of the problem was depressed world trade volume. Of equal concern, however, was the fact that the brunt of the overall trade decline was borne by U.S. exports.

Global wheat trade, for example, dropped by about 20 million metric tons in 1985/86. U.S. wheat exports absorbed two-thirds (14 million tons) of the drop. As a result, the U.S. share of world wheat trade dipped below 30 percent, down from an average of more than 40 percent during the previous 15 years.

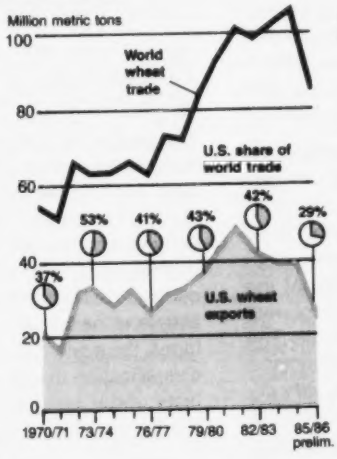
Similar share losses for the United States were evident in the world market for corn and other coarse grains, MacDonald says. In 1985/86, the U.S. share of world coarse grain trade dropped to about 43 percent, after averaging around 60 percent over the previous 15 years.

Although American farmers can still claim a remarkably large share of global grain trade, recent losses help explain the current push to recapture markets and revitalize exports with competitive pricing policies and new trade initiatives. Will they work?

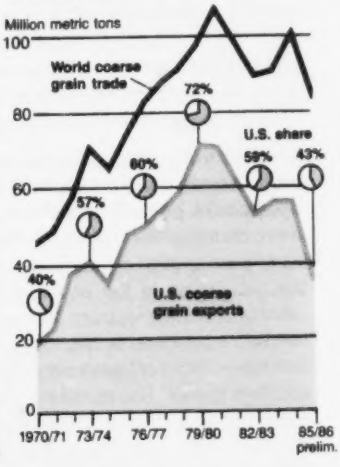
It's too soon to be sure, according to MacDonald, but there are some indications that the worst could be over. Tentative USDA forecasts for 1986/87 show increases in U.S. exports of both wheat and corn.

"Our prospects for larger sales in the future and a recovery in lost shares may depend heavily on the overall direction of world trade," MacDonald maintains. "In the past, when world trade volume has been expanding, the United States has generally done very well. On the other hand, when world trade has contracted, the sales reductions have often come primarily at the expense of the United States."

Wheat: The U.S. Share of World Trade Dips Below 30%



Coarse Grains: The Decline in World Trade Comes Out of U.S. Exports



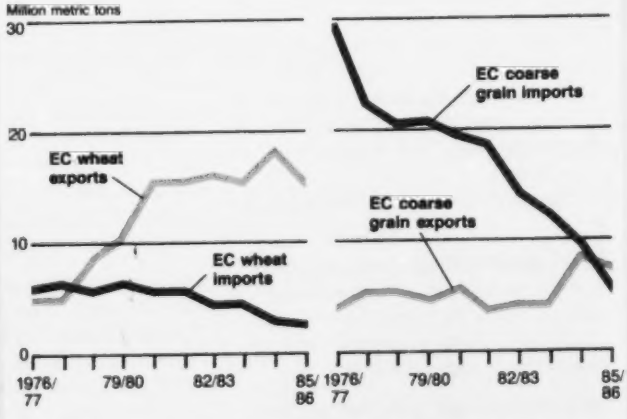
Gleaning

THE EUROPEAN COMMUNITY'S SHIFT from a net grain importer to a net exporter is an impressive achievement from the European perspective. For American grain farmers, however, it has meant a shrinking EC market and growing competition, often at subsidized prices, in many other markets. The rapidity and magnitude of the EC shift is illustrated in the accompanying chart, which takes into account the two newest EC members, Spain and Portugal.

. . . just 10 years ago, the twelve current EC members were net importers of both wheat and coarse grains, says economist Stephen Sposato of the Economic Research Service. In the case of wheat, for instance, the twelve imported a combined total of around 6 million metric tons and exported about 5 million tons. By the 1985/86 season, in contrast, they imported less than 3 million tons of wheat and exported more than 15 million, according to preliminary estimates. USDA forecasts suggest that EC wheat imports may drop again and exports may rise slightly in the year ahead.

. . . also, back in 1976/77, the twelve nations were huge importers of coarse grains (corn, sorghum, barley, oats, rye, and mixed grains). In the period of a decade, Sposato notes, their coarse grain imports declined from nearly 30 million metric tons to an estimated 5.3 million in 1985/86. Meanwhile, their exports of coarse grains (mainly from France) climbed from 4.1 million tons to a record 8.8 million in 1984/85 and an estimated 7.3 million in 1985/86.

The EC Shifts from a Net Importer to a Net Exporter of Wheat and Coarse Grains



Data from 1976/77-1985/86 are for all twelve current members of the EC (including this year's two new members, Spain and Portugal). Data exclude intra-EC trade.

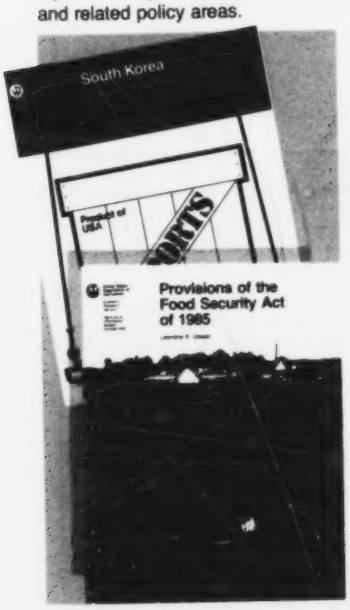
From Aquaculture to Wool

The milk production termination program, reductions in price supports, cotton and rice marketing certificates, Food for Progress, and the conservation reserve are a few of the new programs or approaches introduced by the Food Security Act of 1985.

Although two laws have already been passed to alter or redefine some of its provisions, the 1985 act establishes the broad framework to guide federal agricultural and food policy through 1990.

Separate titles of the 1985 act deal with these commodities: dairy, wool and mohair, wheat, feed grains, cotton, rice, peanuts, soybeans, and sugar. Another title outlines general commodity provisions affecting base acreages, payment limitations, and advance payments to producers.

Other provisions focus on trade, conservation, credit policy and funding authorizations, agricultural research and extension, food assistance programs, marketing, aquaculture, grasshopper control, and related policy areas.



This report summarizes all 18 titles of the 1985 act and draws some comparisons with previous legislation. The report includes a brief history of agricultural legislation and a glossary of agricultural policy terms.

Provisions of the Food Security Act of 1985 *by Lewrene Glaser and others. (Published April 1986; 105 pages; GPO Stock No. 001-019-00461-4; $5.50.)*

Market Profile: South Korea

South Korea has nearly 2 million farms of its own and a population of only about 40 million, yet it's one buyer that "deserves close attention by U.S. agricultural interests."

This is the conclusion of a recent report on South Korea's potential as a growth market for U.S. agricultural products in the years ahead. Here are a few reasons for the report's generally optimistic tone:

- growth rates for South Korea's economy are expected to remain very high. Rising incomes, demographic changes (more women in the workforce, for example), and a growing population will stimulate demand for many items.
- already a major world supplier of textiles and footwear, the country is rapidly becoming a large exporter of ships, consumer electronics, automobiles, steel, and heavy industrial products. Larger export earnings will finance greater imports in coming years.
- although self-sufficiency in rice has been largely achieved, a limited amount of arable land and the small-scale, high-cost nature of its farm sector make continued agricultural imports a virtual necessity for this densely populated, mountainous nation.

Future opportunities to expand U.S. exports are promising for several commodity groups, including: feed grains and oilseeds needed to support a developing meat sector; hides to supply a strong and still-growing leather goods industry; cotton for the country's large textile exports; and tallow as a cooking oil for a food processing industry.

Among the obstacles to greater U.S. sales are Korean import barriers to fruits, vegetables, and processed foods. However, South Korea's trade surplus with the United States may give the U.S. government enough leverage to insist on the lowering of some trade barriers. A greater threat may be protectionist measures in the industrialized nations, including the United States, that restrict imports of textiles and other products supporting the trade-dependent South Korean economy.

South Korea currently ranks among the top half-dozen buyers of U.S. farm products, with purchases that have averaged around $1.7 billion a year since 1980. In most years, 50 to 70 percent of its agricultural imports come from the United States.

South Korea: An Export Market Profile by John Dyck and Donald Sillers. *(Published May 1986; 74 pages; GPO Stock No. 001-019-00427-4; $4.00.)*

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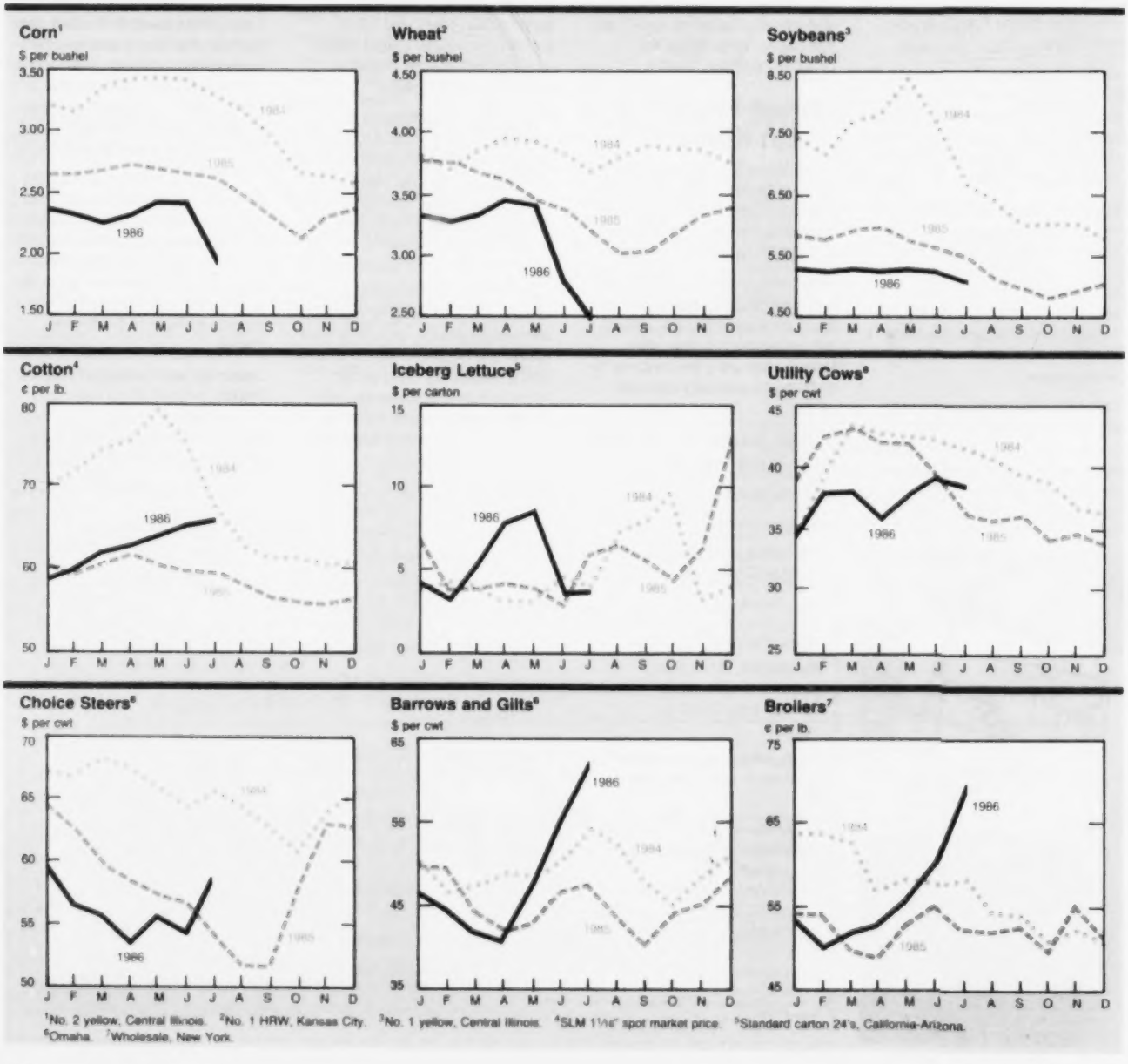
Monthly Price Monitor

USDA's July index of farm prices increased 2.5% from June but was 1.6% below its year-earlier level. Corn prices dropped to $1.93 per bushel, the lowest since October 1982. Wheat declined another 29¢ to $2.49, and soybeans were down 9¢ from June's average to $5.15. Cotton edged up half a cent to 65.7¢ a lb., the eighth consecutive monthly rise. In the meat animals area, utility cow prices were down slightly, while choice steers gained almost $4 to $58.16, the highest price since January. Barrows and gilts jumped to $61.96, up $21 since April and the highest price since September 1982. Broilers surged to 69.1¢ a lb., up 15¢ since the beginning of the year. All prices shown are monthly averages.

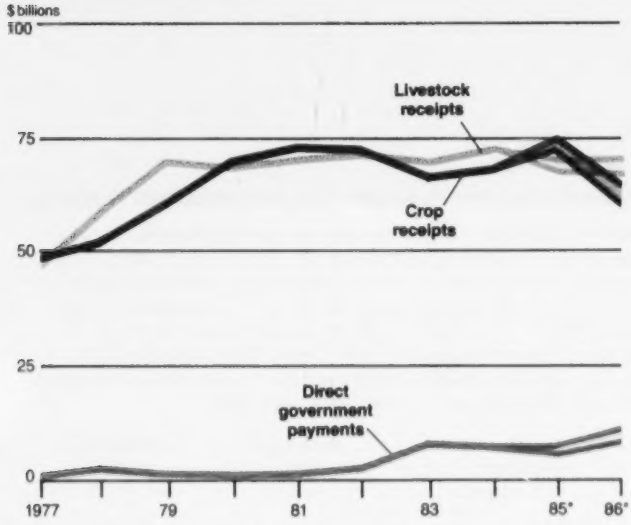


[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1⅛" spot market price. [5]Standard carton 24's, California-Arizona. [6]Omaha. [7]Wholesale, New York.

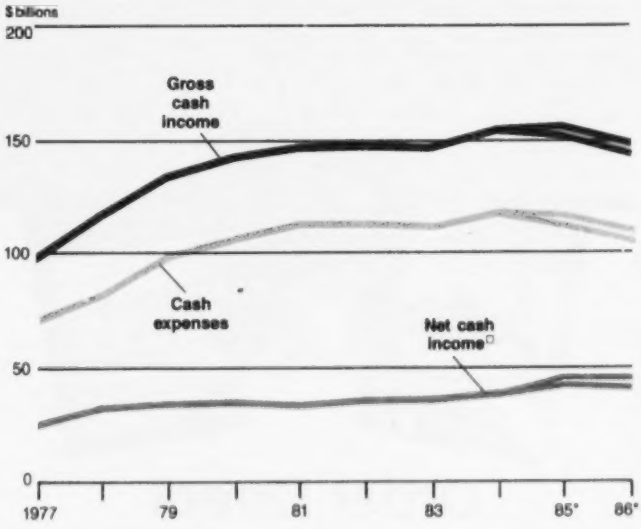
Farm Income Trends

How is the income side of the farm financial picture shaping up this year? Economist Gary Lucier, a farm income analyst with USDA's Economic Research Service, provides some answers, which are presented in the charts below. Ranges for 1985 are still preliminary estimates, and projected ranges for 1986 are very tentative, he stresses. Though figures may change as the year progresses, farm income prospects for 1986 suggest the following:

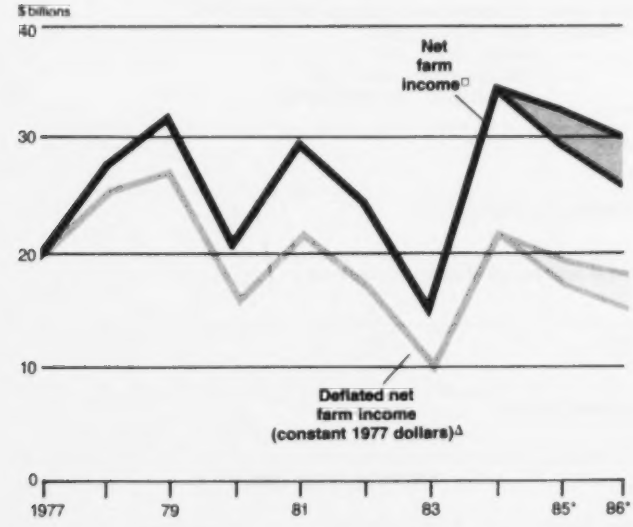
A Sharp Drop in Crop Receipts, But a Big Increase in Government Payments



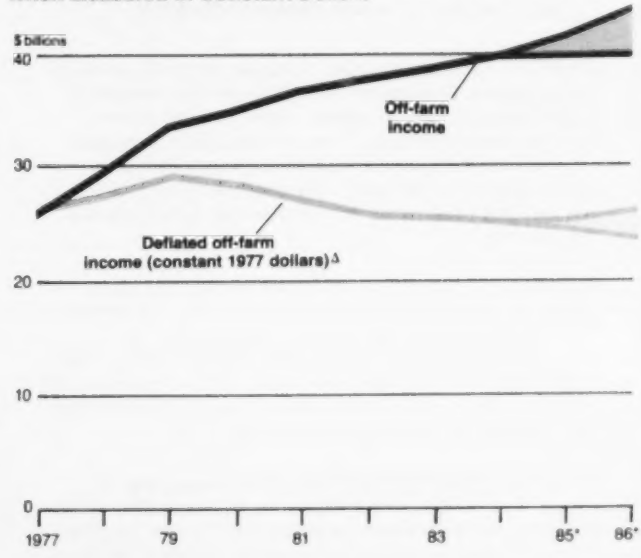
Net Cash Income Near Last Year's Record High, as Gross Income and Cash Expenses Both Decline



Net Farm Income Ranging from $26-$30 Billion, But Much Lower After Adjustment for Inflation



Off-Farm Income on an Upward Trend, Though Fairly Stable When Measured in Constant Dollars



*Preliminary range for 1985; projected for 1986. □Net cash income differs from net farm income in several respects, the most significant of which is probably an adjustment for the value of inventory change in the net farm income figure. Thus, net farm income approximates the value of a given year's production whether or not that production is marketed, while net cash income attempts to measure the income that farmers actually receive in a calendar year. ΔAdjusted for inflation using the GNP implicit price deflator.

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PERSPECTIVES

USDA'S SEPTEMBER ESTIMATES OF THE 1986 GRAIN HARVEST confirm earlier forecasts of lower production. According to analysts, production declines will largely result from fewer acres planted as farmers increased their participation in government commodity programs. Even with stronger domestic and export demand in prospect for the year ahead, the output reductions will not be enough to eliminate large stocks.

The U.S. feed grain crop is forecast at 252 million metric tons, down 8%—yet second only to last year's record harvest. Corn will supply about 83% (8.3 billion bushels) of the total, while sorghum will account for about 9% (873 million bushels). The barley crop—which accounts for only 1% of the total feed grain crop—is forecast to reach a new high of around 626 million bushels this year, following record production in 1984 and a near-record in 1985.

Corn yields are expected to average about 120 bushels an acre, topping last year's record of 118 bushels. Yields for sorghum—at 64.7 bushels an acre—will be the second highest in history.

Economists forecast an increase in world coarse grain trade this season. Trade in 1985/86 was the lowest in 10 years. Good crops in many importer and competitor countries caused world imports to drop 19%, and the U.S. share to decline dramatically to only 43% of the market. Most signs for 1986/87 indicate improved demand for U.S. grain with the U.S. share pegged at 51% by ERS economists. With lower loan rates anticipated (because of farm bill provisions), many importers have been holding off buying until prices completely adjust, economist David Hull explains.

For wheat, average yields for all varieties may drop almost 3 bushels an acre to 34.8 bushels from last season, giving this season's wheat yield a ranking of the fifth highest. Participation in the 1986 acreage reduction program, at 84%, plus less-than-ideal weather conditions in winter wheat growing areas, reduced the 1986 U.S. wheat harvest to a 7-year low, now estimated at around 2.12 billion bushels, a 13% decline from last year.

Even with the smaller wheat harvest, a record supply, forecast at slightly more than 4 billion bushels, is available for the 1986/87 marketing year. That includes this year's production, plus huge surpluses left over from prior seasons. Economists explain that domestic wheat production, aided by generally good growing conditions, has hit records in 2 of the last 6 years and near-records in all other years since 1980. The result: excessive stocks. The increased carryin and this year's expected near-record harvest of hard red spring wheat will overshadow reduced hard red winter output, resulting in a record supply of around 3 billion bushels of bread-making wheat. Soft wheat stocks (used mostly for crackers and cakes) will probably decline about 6% from last season due to the short soft red winter harvest. Durum (pasta wheat) supplies will represent about 2 years of normal use.

The outlook for wheat use this season looks brighter than last year, according to economist Allen Schienbein, because prices are at their lowest level in 8 years. U.S. exports are expected to rise 26% from 1985/86, when they posted their steepest yearly decline on record. The Export Enhancement Program and other credit programs will make U.S. wheat more competitive in world markets, Schienbien says, with the likely result of increasing total shipments to near 1.15 billion bushels. Lower wheat prices, induced by a drop in the loan rate from $3.30 to $2.40 a bushel, should also increase domestic use to slightly above 1985/86's volume. Nevertheless, total disappearance during 1986/87 may be about equal to 1986 production, again leaving large carryover stocks.

The 1987 winter wheat crop is beginning to take shape as growers start seeding in some areas. The acreage reduction program offered for this crop requires participating growers to idle 27.5% of their wheat base acreage. Farmers who comply will be entitled to a $4.38-a-bushel target price, the same as in 1986. The loan rate is reduced to $2.28.

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FEATURES

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The successful farmers of the future will be better managers than today's farmers—production managers, marketing managers, and financial managers. Here's a look at some of the new strategies, skills, and priorities that may be required to survive and prosper in the years ahead.

Farm Machinery Sales Still Stalled *by Eric Van Chantfort* 5

Farm machinery sales will drop for the seventh straight year, and USDA analysts don't see a quick recovery, even when farm financial conditions start improving.

The South Korean Market: A Look Beyond the Recent Slump *by Doug Martinez* 6

Last year, our share of South Korea's farm imports fell below 50 percent for the first time in two decades. But U.S. exporters shouldn't give up on the long-term potential of this fast-growing, top 10 market.

Reviving Agricultural Exports: Why Is It Taking So Long? *by Eric Van Chantfort* 8

The campaign to revive U.S. agricultural exports has been given "the highest priority," but don't expect overnight miracles, say trade analysts. It took several years for exports to sink to their present level, and it will also take time to reverse the negative forces still affecting world trade.

Developing Countries Develop Into Major U.S. Market *by Eric Van Chantfort* 11

Trade trends show a dramatic shift in the destinations and distribution of U.S. agricultural exports. In the last few years, the world's less developed countries have overtaken the "developed" nations as the leading importers of U.S. grains and feeds.

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Survival Skills for Tomorrow's Farmer

Surviving and prospering. That's the name of the game in agriculture, as in any business. The farmers who intend to thrive in the challenging environment of the late 20th century may have to develop new strategies, skills, and priorities that weren't necessary in past generations.

In a recent report on the prospects for agriculture in the late 1980's and 1990's, Thomas Miller, Warren Trock, and Danny Smith describe the successful farmer of the future, and the demands that he, or she, is likely to face. Miller is an agricultural economist with USDA's Economic Research Service. He is stationed at Colorado State University, Fort Collins. Trock and Smith are professors there. Here are some of their thoughts and observations on what it will take to survive and prosper in the years ahead.

The successful farmers of the future will be better managers than today's farmers—production managers, marketing managers, and financial managers. In other words, they'll be highly skilled at obtaining both technical and economic efficiency.

On the technical side, they'll seek always to squeeze the "last drop" of benefit out of each unit of input, whether land, labor, chemicals, or machinery. New technologies in both crops and livestock will enable them to monitor the production process and maintain peak efficiency.

Although the prices farmers receive for their products will probably continue to fall in relation to the prices they pay for their inputs, this ratio has been drifting downward for decades. Greater productivity from improved inputs made up the difference. There is no reason to think that future downward pressure on prices will prevent efficient farmers from maintaining net farm income at acceptable levels in most years.

Financial Managers, Too

But focusing on technical efficiency alone will not get the job done. Farming is becoming more risky, and capital requirements are higher than they are in other industries. Thus, business expertise in general, and particularly financial management skills to operate in a high risk environment, will be every bit as important as production skills.

The ever-changing business environment will require proficient use of accounting, financial statements and analyses, budgeting and planning, and sophisticated office management procedures. The successful farmers will better understand the risks of the economic and financial environment and utilize the best available marketing and financial management techniques to counter or control those risks.

Financial management skills will be every bit as important as production skills.

On the business side, the emphasis will be on controlling costs and maximizing net income from each farm enterprise, rather than on maximizing volume and gross sales. For example, attention will shift to obtaining higher calving percentages and weaning weights rather than more cows, limiting applications of fertilizer to maximize net returns rather than yields, and producing crops with the most efficient machinery rather than the largest.

Increasing price variability in world markets will intensify the need for reliable marketing information and forecasts. While such information is provided by USDA and many other public and private institutions, the greater level of price uncertainty will strengthen the incentive for farmers to acquire their own information.

Furthermore, emerging technologies in telecommunications and microcomputer systems will offer farmers instant access to the best information available for making production, marketing, and financial decisions. The ability to accumulate accurate, detailed information and to form reliable expectations from this information will become crucial to survival in a farm business.

Opportunities Along with Risks

Increased fluctuation in financial conditions and markets will present opportunities for gains as well as losses. Successful farmers will be those who maintain the resiliency to survive during the busts so they are in a position to take advantage of the booms. This resiliency will be reflected in the way farm investment is financed, in the organizational structure of the farm, and in the use of technologies so that production can respond to changing conditions.

Structurally, the adjustment seems to be away from the savings-financed sole proprietorships that have long been traditional to U.S. family farming. Partnerships and family-held corporations are, to some extent, replacing the sole proprietorships for commercial-size farms. At the same time, debt financing is declining as the principal means of acquiring the resources necessary for farming. Leasing and various methods of outside equity financing are growing in importance.

Overall, these changes appear to represent the slow emergence of a more "industrial" type of business organization and financial structure in agriculture. Whatever drawbacks this may have—outside financing, for instance, may entail some loss of control over assets by farmers—it should improve the financial resiliency of the agricultural sector. Resilient farms will provide the agricultural industry of tomorrow with the ability to adjust to an unstable environment.

Although the future is impossible to predict, the present farm crisis seems to be the painful part of a permanent shift to a new baseline environment for agriculture. If so, it should be noted that American farmers have successfully adapted to changes of this magnitude in the past. Moreover, many farmers—a majority, in fact—have already made adjustments to position themselves so they can survive, and prosper, in the challenging economic and financial environment of the next few decades. □

*[A copy of the report on which this article is based, **Future Prospects for Agriculture in Colorado and the United States,** Bulletin 533A, is available for $3 from Cooperative Extension, 171 Aylesworth S.W., Colorado State Univ., Fort Collins, CO 80523.]*

Farm Machinery Sales Still Stalled

For farm machinery manufacturers and dealers, the long-anticipated light at the end of the tunnel hasn't even flickered.

Sales have been stuck in reverse since the decade began, and 1986 looks like more of the same. Spending by farmers on new and used equipment is expected to drop for the seventh straight year.

Farmers' expenditures probably will range somewhere around $4.8-$5.1 billion, estimates economist Carlos Sisco of USDA's Economic Research Service. That, he says, would be the fewest dollars spent since 1972.

The 1970's were the growth years for farm machinery, with sales peaking at $11.7 billion in 1979. Then the market started shrinking. Last year, farmers purchased an estimated $5.7 billion worth of farm equipment, less than half of 1979's record outlays.

"For most machinery categories, unit sales of new equipment are projected to fall sharply this year," Sisco says. "Sales volume is expected to drop 10 to 20 percent for new two-wheel-drive farm tractors (over 40 horsepower) and about 33 percent for four-wheel-drive units." Sisco and his colleagues also expect a decline of around one-third in unit sales of new grain harvesting equipment and somewhat smaller declines for most forage and haying equipment.

Manufacturers have closed a number of plants, temporarily shut down others, curtailed work schedules, and discounted prices to reduce their large machinery inventories. As a result, inventory levels have dropped some in the past year, even with the continued sales slump, says Sisco. Nevertheless, stocks of unsold items remain high, with manufacturers holding a 1- to 2-year supply (based on current sales volume) for most machinery categories.

Does all this jeopardize the future productivity and efficiency of American farms? So far, probably not, say most analysts. Sagging sales of brand new units don't necessarily mean that farmers are allowing their machines to become obsolete.

There's a large supply of good-quality used machinery available at very attractive prices—and, at least in the case of tractors, a majority of expenditures are now going for used rather than new machinery. In 1980, about 60 percent of farmers' total purchase outlays for farm tractors went for new tractors. By last year, the balance had shifted. More than half—55 percent—of the dollars were spent on used tractors.

Certainly, that's no help to manufacturers, who've been hit hard not only on the domestic front, but also by a deteriorating trade situation. The value of U.S. machinery exports last year dropped to less than $1.9 billion, the lowest level since 1978. At the same time, the U.S. farm machinery trade balance (exports minus imports) slipped beneath $300 million. As recently as 1981 and 1982, the U.S. surplus in farm machinery trade hovered around $1.2 to $1.4 billion.

Trade data for the first quarter of 1986 were worse yet. Imports climbed above exports, and the balance turned negative, registering an "unprecedented" $41 million deficit, Sisco notes.

Part of the problem, he explains, stems from the decision by U.S. manufacturers to specialize in the production of large tractors, and to shift production of smaller tractors overseas. The decision seemed justified in the 1970's because of the rapidly expanding demand for large, high-powered machinery in the United States and Canada. In addition, the establishment of foreign subsidiaries for the production of smaller equipment allowed U.S. manufacturers to get around foreign trade barriers so they could compete more effectively in world markets. The demand for smaller tractors (40 to 99 horsepower) is three times larger in Europe than in the United States.

In the last several years, however, this strategy has tended to limit the markets for U.S.-made machinery to the relatively few nations that can use the large, specialized equipment. U.S. plants have also become more dependent on orders for parts for foreign subsidiaries, and on orders for special-purpose equipment for large-scale but limited-duration projects (irrigation development in Saudi Arabia, for instance).

The trouble is that many U.S. markets have recently trimmed their purchases for various reasons, while imports of smaller tractors from Europe and Japan have remained strong. These developments are all reflected in the U.S. machinery trade balance.

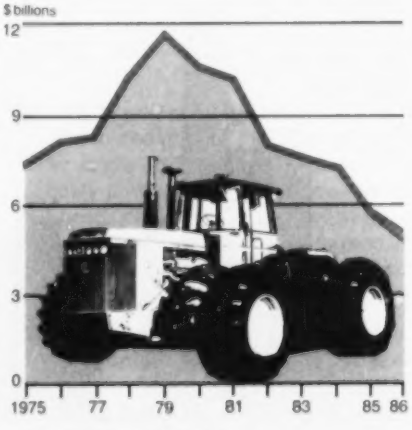
But as important as exports are, the domestic market is much larger, and analysts generally see little basis for optimism in the next year or two.

"Many of the fundamentals are still negative, including the need to pay off some of the large debt accumulated by the farm sector," says economist Michael Hanthorn, another ERS analyst.

"When economic conditions in the sector begin to pick up, the farm machinery market eventually will improve," he says. "The catch is that farmers are probably not going to run right out and buy new tractors. Farmers and their lenders will want some of the debt incurred in recent years to be paid off first."

In his view, there could be a lag of a year or more before a pickup in farm financial conditions begins to be reflected in the farm machinery market. □

Farm Machinery Purchases Still Dropping



1985 preliminary; 1986 forecast.

The South Korean Market: A Look Beyond the Recent Slump

Once one of the world's poorest countries, South Korea has emerged as a major exporter of manufactured goods. It has even introduced a new car, called Hyundai, onto the North American market.

And along the way to becoming a "Pacific Rim" power proud of its economic might and growing world prestige (symbolized by its selection as the site of the 1988 Summer Olympics, for example), South Korea has also been transformed into a major market for U.S. farm products.

The fact that sales are down now—and may stay weak for the next few years—doesn't dampen the long-term optimism held by analysts.

U.S. farm sales slipped from a 1983 peak of $1.8 billion to $1.4 billion in 1985, largely reflecting a South Korean effort to diversify its suppliers. Despite this recent drop in U.S. sales, South Korea remains a solid market with considerable long-term growth potential.

"U.S. exporters shouldn't allow the current downturn to deceive them into thinking that all the opportunities have passed. South Korea's growing population, continued heavy reliance on imports, and strong relations with the United States all point to a positive trade picture," says economist Don Sillers, an Asian analyst with USDA's Economic Research Service. "Feed grains and oilseeds should continue to enjoy strong demand."

Sillers also suggests that the size of the South Korean market may sometimes be overlooked in the recent concern over falling farm sales. South Korea, he says, is still one of America's top ten customers for agricultural products.

A Success Story

The South Korean economic success story has been practically without parallel. Devastated by the Korean War (1950-53), Korea "limped through the 1950's, dependent on massive U.S. economic aid." A lot has changed since then, says Sillers.

"Korea promises to show a higher long-term rate of economic growth than most other major U.S. agricultural markets," says Sillers. "Because of its present importance and possibilities for further growth, the Korean market deserves close attention by U.S. agricultural interests."

At the moment, he says, U.S. concern should center on maintaining a strong market presence, preserving our present position for later, long-term opportunities.

The United States held a 67-percent share of the Korean agricultural import market in 1983. But that share had shrunk to 49 percent by the end of last year. Prodded by lower prices from U.S. competitors, the South Koreans have put into practice a long-held desire for greater diversification among suppliers.

High prices for U.S. corn appear to have pushed diversification along in the last few years. The trend could be seen in Korea's substantial purchases of corn from the People's Republic of China as early as 1984.

"In 1983, 97 percent of South Korea's corn imports came from the United States," says economist Sophia Huang, another Asian analyst with the Economic Research Service. "By 1985, that share stood at 49 percent."

Meanwhile, feed-quality wheat from Australia and Canada has been substituted as an ingredient in livestock feed, displacing some U.S. corn.

U.S. corn sales will likely pick up a bit by the end of the year.

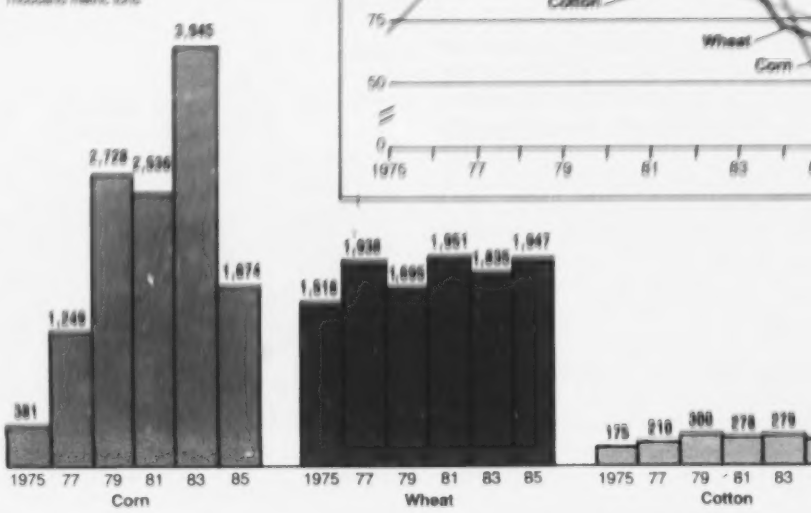
"The U.S. share of South Korea's [illegible] imports, which fell below 50 percent for the first time in more than 20 years, is expected to recover somewhat toward the end of 1986 as U.S. cotton prices come more in line with world prices," says Huang.

U.S. soybean sales, too, will probably rise to meet increased livestock feeding in South Korea.

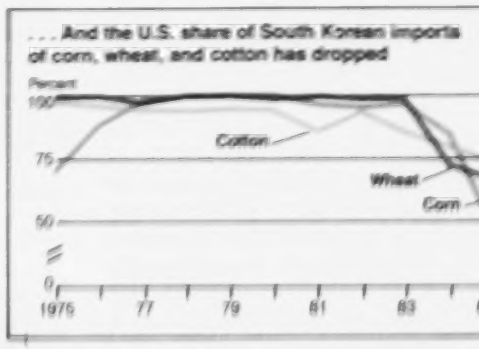
Even so, the U.S. share will probably not approach the 67-percent level again.

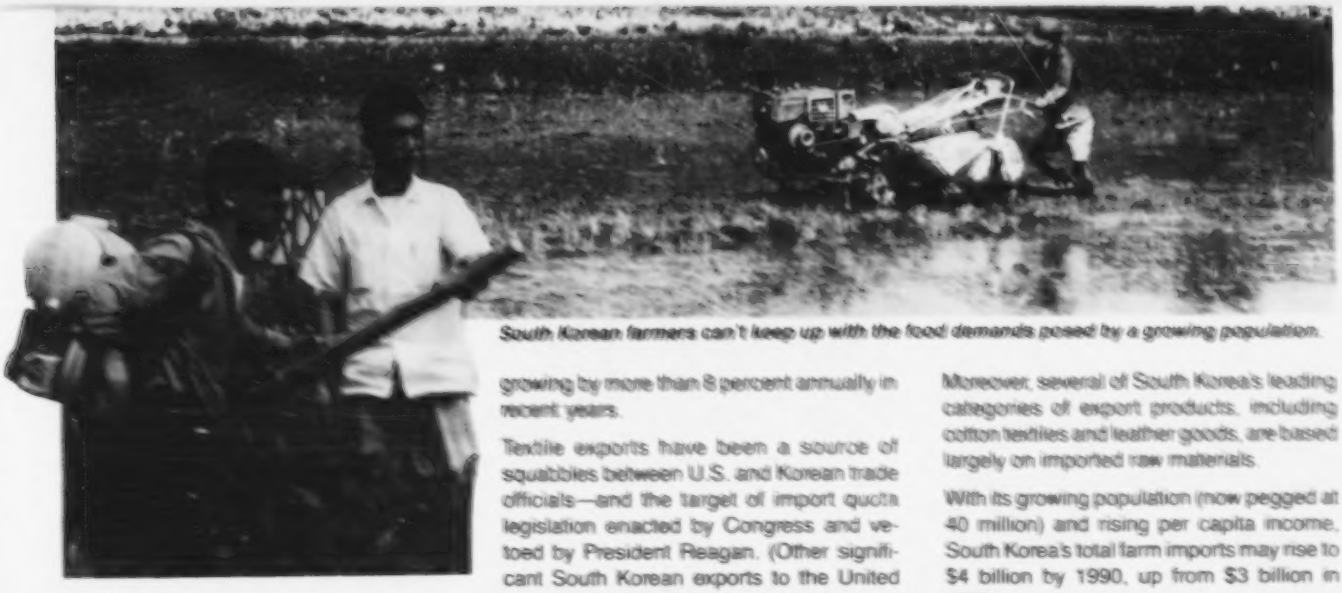
"The South Korean perspective is that [illegible] ing on U.S. corn for almost all of their [illegible] grain supply, for example, makes them dependent on one crop and one supplier," says Sillers.

Trends Show a Weakening of U.S. Farm Sales to South Korea, Particularly of Corn and Cotton . . .



. . . And the U.S. share of South Korean imports of corn, wheat, and cotton has dropped





South Korean farmers can't keep up with the food demands posed by a growing population.

And the long-term outlook for certain commodities is decidedly poor.

"Wheat imports are unlikely to grow and may fall. Significant rice imports are also unlikely since South Korea has largely become self-sufficient in this commodity. Raw cotton imports are likely to grow slowly because of increasing competition in world textile and garment markets, and growing trade barriers to South Korea's exports of these products," Sillers says.

But the United States also has a problem selling processed foods and other high-value items such as fruits and vegetables because of tough trade barriers. Sillers says, however, that tied to trade negotiations to tone down such barriers, aggressive marketing might make inroads into these areas.

Strong Political Ties

One factor favoring good trade relations is a powerful political relationship. The United States and South Korea have political ties that are stronger than the bonds between most nations.

The most obvious connection, perhaps, is the presence of some 37,000 U.S. troops permanently stationed in South Korea.

"The political dimension is very important in looking at trade relations between the two countries," says Sillers. "There is a lot at stake in this political relationship, and both countries are very aware of this."

That political dimension can apparently transcend even the troubles in textile trade between the United States and South Korea.

Recently, the two countries concluded an agreement limiting the growth of Korean textile exports to the United States to less than 1 percent a year. By contrast, Korean textile sales to the United States had been growing by more than 8 percent annually in recent years.

Textile exports have been a source of squabbles between U.S. and Korean trade officials—and the target of import quota legislation enacted by Congress and vetoed by President Reagan. (Other significant South Korean exports to the United States are steel, consumer electronics, and a few agricultural products like tobacco and ginseng.)

But the political ties don't mean the United States can stop trying to be a savvy trader, Sillers cautions. That's become clear from the recent drop in the U.S. share of the South Korean market.

"Our market share in South Korea is matched in very few other countries, but it will continue to erode without intelligent market development efforts," he says.

One factor that should certainly help, say the analysts, is the Food Security Act, commonly called the 1985 farm bill. That bill is the reason for optimism about a year-end boost in cotton sales to South Korea.

Mandating lower support prices for cotton, the farm bill is bringing U.S. cotton prices more in line with world prices, says Huang.

That should also be the case with other U.S. commodities, including corn, which are covered by the farm bill's lowering of support prices.

Rising Incomes

The country's import growth has ridden the crest of rapid industrialization that started in the early 1960's, boosting personal income.

"Rising household incomes have led to increased demand for meats, grains, and other foods," Sillers says. "However, the densely populated, mountainous nation has been unable to produce enough wheat to meet consumer demand, or to produce enough feed grains and oilseeds to meet the demand for feedstuffs from domestic producers of meats, eggs, and milk."

Consequently, the country has relied on imports to close the gap between the domestic demand and supply of these products.

Moreover, several of South Korea's leading categories of export products, including cotton textiles and leather goods, are based largely on imported raw materials.

With its growing population (now pegged at 40 million) and rising per capita income, South Korea's total farm imports may rise to $4 billion by 1990, up from $3 billion in 1983.

Demographic trends in Korean society are favorable for additional trade as well.

"The Korean market for U.S. food products is mostly an urban one," says Sillers. "And the heavy rural migration to the cities expected in the late 1980's will push the growth of the crucial urban market ahead of that of the population as a whole."

The changing role of women in Korean society is also changing food consumption patterns.

"To help slow population growth, the government is trying to discourage large families. This will also probably shift their time out of the home and away from cooking, thereby increasing demand for convenience foods and food away from home and weakening reliance on the staple, cooked rice," Sillers says.

"And as Korea's present large number of teens reach adulthood and form families, the number of household heads who have acquired a fondness for foods traditionally absent or rare in the Korean diet, including meats and dairy products, will increase."

Such societal changes should bolster U.S. sales of feed grains and oilseeds to build livestock and dairy herds for meat and milk, and may offer some openings to U.S. exports of processed and high-value products—now effectively barred by trade barriers.

"If we can negotiate a reduction in trade barriers to, say, fruits and vegetables and value-added processed products," says Sillers, "we could begin to supply some more products." □

[*Based primarily on information provided by economists Donald Sillers and Sophia Huang of the International Economics Division, Economic Research Service.*]

Reviving U.S. Exports: Why Is It Taking So Long?

The campaign to revive U.S. agricultural exports has been called "the highest priority," "the most essential of goals," and "one of the major tasks before us" all the way from the Great Plains to the nation's capital.

Key elements of this campaign include the reduction in loan rates to improve U.S. competitiveness, expanded export credit and promotion programs, and efforts to hold down the dollar's value on world currency markets. Other steps focus more on individual competitors or customers—a harder line with the European Community, negotiations to lower Japan's import barriers, and the recent incentives to encourage the Soviets to fulfill their purchase agreement for 4 million tons of U.S. wheat in fiscal 1986.

The results have left many trade analysts mystified.

They are surprised not by the failure to achieve an immediate, dramatic, across-the-board export recovery. They are puzzled, rather, that hope, optimism, and determination seem to have given way so quickly to disappointment, frustration, and impatience.

Whether or not these particular initiatives prove effective, say analysts, any verdict at this time would be premature.

In the first place, one of the most promising actions, bringing U.S. prices down to competitive world levels, has only just begun to take effect with the beginning of the new crop years (June 1 for wheat, August 1 for cotton, and September 1 for corn, sorghum, and soybeans). And, if forecasters are correct, U.S. export volume of grains and cotton will respond with a substantial rise in the year ahead.

But don't expect miracles, advise the economists. Export earnings will remain depressed next year, and, whatever actions are taken, American efforts still have to fight an uphill battle to reverse some fundamentally negative forces in world trade.

What are these negative forces, where did they originate, and what will ultimately be required to return exports to the growth track? In answering these questions, economist Steve MacDonald and other analysts of USDA's Economic Research Service bring to light some of the complexities of international trade, the obstacles to renewed export growth, and the uncertainties that lie ahead.

Years of Confidence

Just 5 years ago, the analysts remind us, no one would have taken you seriously had you predicted that tumbling exports would soon be one of American agriculture's most vexing problems.

In the 1981 fiscal year, U.S. exports of farm products earned a record $43.8 billion. Many forecasters were projecting $50 billion in exports by the mid-1980's. Earnings had set twelve consecutive records beginning in 1970, when sales totaled less than $7 billion. In the same period, the volume of U.S. agricultural exports had climbed from around 60 million metric tons to more than 160 million.

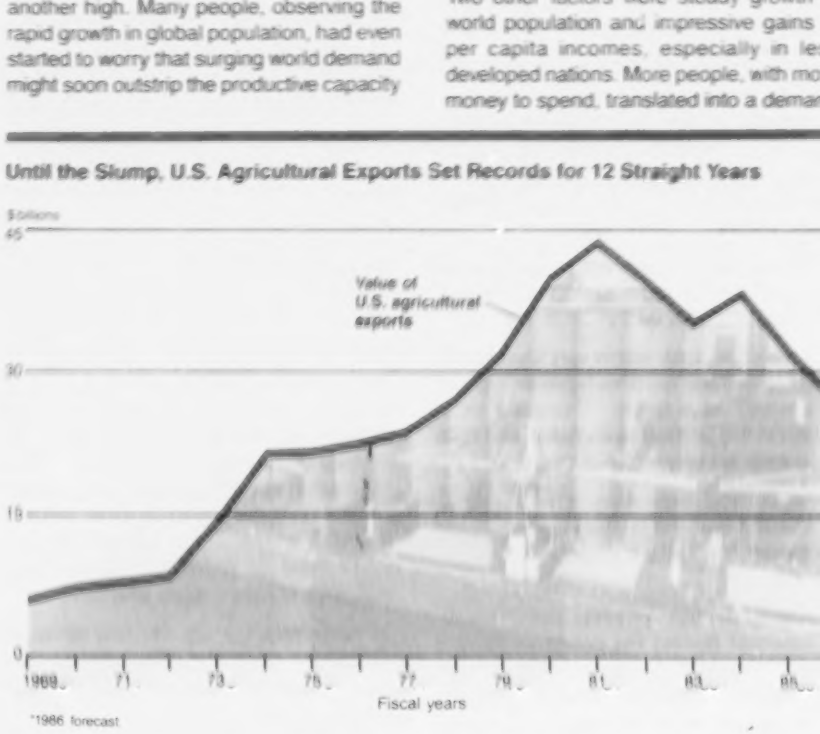
By the time the 1980's began, it was virtually taken for granted that each year would mark another high. Many people, observing the rapid growth in global population, had even started to worry that surging world demand might soon outstrip the productive capacity of the American farmer—and push up domestic food prices. Questions were raised about the possible future rationing of exports to protect the pocketbooks and the food supplies of American consumers.

Confidence in the world's dependence on U.S. farm products contributed to a willingness to use food as a foreign policy instrument. Some farm groups, for example, proposed "a bushel for a barrel" to make OPEC pay for driving up oil prices. In early 1980, the United States placed an embargo on additional grain shipments to the USSR in response to the Soviet invasion of Afghanistan.

The dramatic growth in the volume of U.S. agricultural exports during the 1970's—5 percent per year, on average—had a number of causes. One factor was a relatively inexpensive U.S. dollar on world currency exchange markets. The more dollars a nation could buy with its currency, the more American products it could afford to import.

Two other factors were steady growth in world population and impressive gains in per capita incomes, especially in less developed nations. More people, with more money to spend, translated into a demand

Until the Slump, U.S. Agricultural Exports Set Records for 12 Straight Years



What are the forces that are dragging down U.S. exports, where did these forces originate, and what will ultimately be required to return exports to the growth track?

for more food and a wider variety of items in the diet. Greater demand for meat, dairy products, and eggs had a major impact on U.S. exports of the feed grains and oilseeds needed by these nations to establish and maintain livestock and poultry sectors.

Another stimulant to U.S. exports involved political decisions in the Soviet Union, Eastern Europe, and China to improve the diets of their people by buying from the West. Still other factors included tens of billions of dollars in credit extended to less developed countries, increased foreign exchange earnings in these countries as the industrialized nations bought more of their products and the prices for these products rose, the stimulative impact of oil revenues on imports of oil-producing nations, and, of course, the large supplies of agricultural products available from the United States.

Derailed from the Growth Track

It was true that many dozens of nations had come to depend on the productivity of America's farms. The reverse was also true: A great many American farms had come to depend on growing export markets. The risks inherent in that dependence have become apparent in the last few years.

From fiscal 1981's peak of $43.8 billion, U.S. agricultural exports fell to $31.2 billion last year—nearly a 30-percent drop. Export volume tumbled from a 1980 high of 163.9 million metric tons to 125.7 million last year. Both volume and value have dropped again this year—value to an estimated $26.5 billion and volume to around 106 million tons.

Again, economists suggest that several factors came together to derail U.S. exports from the growth track. The economies of the United States and other industrialized nations were plunged into recession at the start of the decade, partly as a result of high oil prices and U.S. efforts to stem an inflationary spiral in its domestic economy. The curtailment of imports, overseas investment, and lending by the industrialized nations quickly spread the recession.

The less developed countries, which depend on export earnings and credit to finance their imports, saw their markets shrink and the prices for their commodities drop. Meanwhile, tighter credit and sharply rising interest rates aggravated the debt situations of many poorer nations, until interest payments were eating up a huge portion of their diminished export revenues. The widening recession reduced the buying power of individuals and entire nations, effectively depressing the demand for food imports and the overall volume of world agricultural trade.

The recession and its consequences were major factors, but certainly not the only ones. The embargo of the Soviet Union hurt U.S. sales, at least temporarily. The U.S. competitive position in world markets was also damaged as the relatively "cheap" U.S. dollar of the 1970's began to move steadily in the other direction. The dollar eventually appreciated more than 30 percent in our major agricultural markets before it began to slowly turn back down again last year.

At the same time, a series of fixed increases in U.S. price supports had been mandated by the 1981 farm bill, which assumed continued high rates of inflation and continued growth in world demand. As world demand weakened, the price floor under major U.S. farm commodities was rising, giving an edge to competitive suppliers and providing a "price umbrella" that encouraged greater production abroad. U.S. actions to reduce output and improve the global supply-demand balance were offset by output gains in other nations.

These and other factors—including the successes of the "Green Revolution"—affected the trade environment, in part by bolstering foreign efforts to achieve greater self-sufficiency. Not only Europe, but other parts of the world including India and, most recently, China, have made significant progress in reducing dependence on food and feed imports. Total foreign grain production has set records in 3 of the last 5 years.

The 1980's are different, as well, in that American traders face more competition in more product areas. Partly because of its big advantage in bulk commodities, the United States perhaps failed to expand its competitive range as much as it could have during the 1970's. Some analysts say the United States didn't take full advantage of the relatively fast growing trade in high-value processed products, didn't move aggressively enough in pursuing emerging markets for new products, and has been somewhat slow in appealing to the special preparation and packaging preferences of foreign customers. More attention is now being focused on foreign consumption patterns—and on responding to foreign concerns in such areas as U.S. grain quality.

Beyond developments in world agriculture and the world economy, and aside from any faults in American policies or practices, U.S. exports have also been damaged by obstacles erected in other nations. Several nations offer preferences to other suppliers for political or economic reasons. And many have raised additional barriers to protect their own domestic markets and farm sectors, while they draw heavily on their national treasuries to subsidize exports, capture markets, and dispose of their surpluses.

Prospects for Recovery

Given all the factors affecting U.S. agricultural exports, what will it take to get them back on the growth track? Economists can already point to some positive signs. In their tentative forecasts for 1986/87, they project roughly a 25-percent increase in export volume of U.S. wheat, nearly a 30-percent rise for feed grains, and more than a tripling of cotton exports from this year's very depressed levels. Increases will be spurred by sharp declines in U.S. export prices, reflecting the reduced loan rates for major bulk commodities. But the final dollar totals on next year's exports may be less encouraging because higher sales volumes could be offset by the lower prices.

For sustained volume and value gains, analysts agree that effective export promotion, credit, and aid programs are important, as are policies to counter unfair trade practices. However, it will probably take more, they say. It will take some fundamental adjustments. *(continued on next page)*

Some of these adjustments are already occurring. The U.S. dollar, for instance, has declined substantially against several major foreign currencies, although it remains strong against the currencies of a number of countries, including Canada and Argentina. A lower valued dollar makes our exports more competitive and less expensive for foreign buyers whose currencies have appreciated against the dollar. Although a weaker dollar will provide some sorely needed relief over time, analysts also indicate that the effect of the recent declines will not be immediate because, for several years, foreign production and purchase decisions were being influenced by a rising dollar.

More important, according to many economists, are the longer term implications of provisions in the 1985 farm bill to bring U.S. commodity prices closer to market-clearing levels. Once it becomes evident that the United States won't price itself out of world markets—or set a high price floor protecting other producing nations—the other nations will recognize that they'll have to share the price consequences of their own excess production. That, in turn, will reduce the incentive to expand production abroad.

Yet here, too, the full impact won't be felt until foreign nations have had a chance to implement changes in their farm policies and production decisions in response to the more competitive U.S. posture.

USDA analysts don't have crystal balls to predict with any certainty the outcome of the new market-oriented policies, and they don't expect to see other nations slashing their production. What they do expect, however, is a slower rate of expansion in foreign production by both importers and major exporters.

"With these new policies," says economist Steve MacDonald, "it is now more likely that future increases in world import demand will benefit U.S. rather than foreign producers."

Yet a lower valued dollar and more competitive U.S. pricing policies are only part of the picture. Demand has to grow, and the rate of growth depends heavily on the health of the world economy. Though the prognosis is uncertain, there are some encouraging developments. Lower interest rates in the United States may help stimulate economic growth both here and abroad—and help reduce the repayment burden for debtor nations. Meanwhile, relatively low oil prices strengthen the economic outlook for many oil importing nations, but not so for exporters such as Mexico and Nigeria.

If a stronger world economy can be achieved and sustained, it would mean more buying power, and global trade would expand—assuming that new trade barriers aren't erected and that trade wars can be avoided. One analyst points out that world population is expected to double before the middle of the next century. The food will have to come from somewhere.

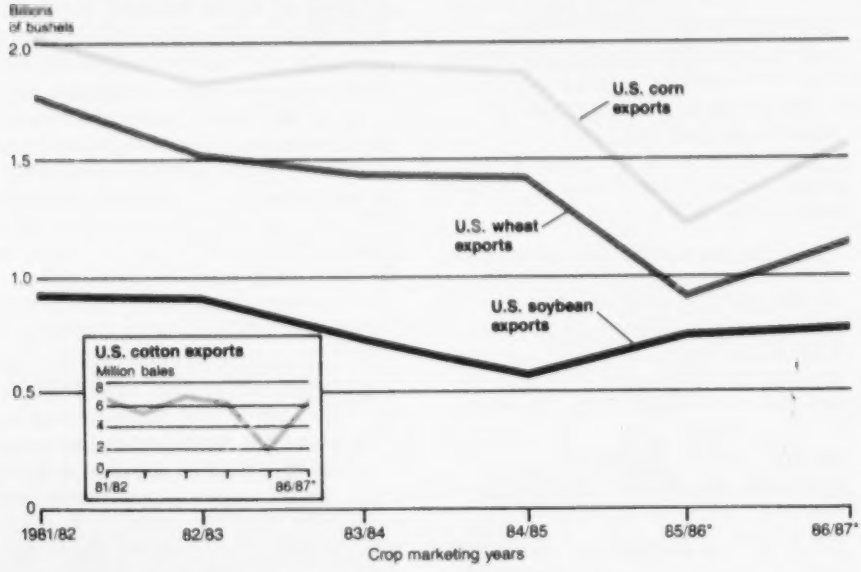
The future, like the past, will be bumpy, and the fruits of current developments may not be fully reaped for another year or two, but the stakes are high. Agricultural exports provide jobs for well over a million Americans on and off the farm. Persistent surpluses in agricultural trade help reduce persistent, and growing, deficits in nonfarm trade. Millions of people throughout the world depend on the American farmer, and their purchases, in turn, help support efficiencies in U.S. farm production that keep food prices down for the consumer. U.S. consumers, in fact, spend a smaller proportion of their incomes on food than people in any other nation.

The stakes, of course, are also high for American agriculture. More than one in every three harvested cropland acres is now producing for export, and the potential for significant demand growth is far greater for foreign than domestic markets.

Although many trade-determining factors are outside U.S. control, an export turnaround is worth working for with both determination and patience, say analysts, because a healthy future for American agriculture almost certainly depends on an expansion in international trade. □

[Based on information provided by economist Steve MacDonald and other analysts of the International Economics Division, Economic Research Service.]

If Forecasts Are Correct, U.S. Export Volume Will Turn Upward in the Year Ahead



*1985/86 estimated; 1986/87 projected as of August 1986. Projections are revised monthly.

Developing Countries Develop Into Major U.S. Market

The destinations and distribution of U.S. agricultural exports are changing, with the less developed countries of the world assuming an increasingly prominent role in U.S. trade fortunes.

For each of the last 3 years, more U.S. grains and feed were purchased by the less developed countries (LDC's) than by the traditionally larger markets of Western Europe, Japan, Canada, and the other "developed" nations.

For U.S. oilseeds, it's still the developed nations that take the lion's share (roughly two-thirds) of our exports, but their purchases have dropped sharply. Meanwhile, U.S. shipments to the LDC's are holding near record levels.

"The composition of U.S. export markets has shifted, perhaps permanently," notes economist Steve MacDonald. This shift toward a bigger role for the LDC's has been one of the more important trends in U.S. agricultural trade over the past decade.

Data from MacDonald and other trade analysts of USDA's Economic Research Service reveal the extent of this shift in the U.S. customer base.

In fiscal 1975, just over half of total U.S. grain and feed exports went to a relative handful of buyers that economists classify as the developed nations. The remaining portion was sold, mainly in smaller quantities, to more than 100 LDC's and several centrally planned countries.

The shift toward a bigger role for the LDC's has been one of the more important trends in U.S. agricultural trade.

By last year (fiscal 1985), the distribution had changed significantly. Less than two-fifths of U.S. grain and feed exports went to the developed nations, while slightly more than two-fifths went to the LDC's. Centrally planned markets (the USSR, Eastern Europe, and China) took about one-fifth of the total.

Although purchase volume has dropped sharply in the last few years for all three categories of buyers, the largest and most sustained declines have come in our developed country markets. From a fiscal 1980 peak of nearly 51 million metric tons of U.S. grains and feeds, our exports to the developed nations dropped by more than 30 percent to less than 35 million tons last year. That was the lowest volume in more than 10 years.

Of the three categories of customers, the centrally planned nations have the most volatile record of ups and downs in grain imports. Their role, too, has increased significantly relative to the developed nations, but they continue to trail far behind in total buying.

Oilseeds and products rank second only to grains in generating export revenues for U.S. agriculture. In oilseeds, the developed nations remain the largest U.S. customers by a wide margin—yet the LDC's have been closing the gap as imports by the European Community and Japan have declined.

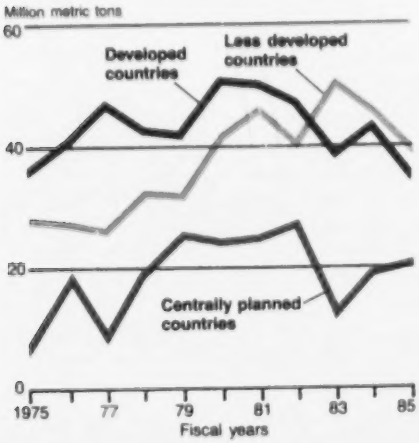
In fiscal 1975, more than 80 percent of U.S. oilseed export volume went to the developed nations, and only about 12 percent to the LDC's. By 1985, the share of U.S. oilseeds going to the LDC's had more than doubled to 30 percent.

Trade analysts recognize that Western Europe, Japan, Canada, and several other developed markets will remain among the top customers for U.S. agricultural exports. The analysts suggest, however, that the potential for future export growth is probably greater among the LDC's, as a group, than among the developed nations.

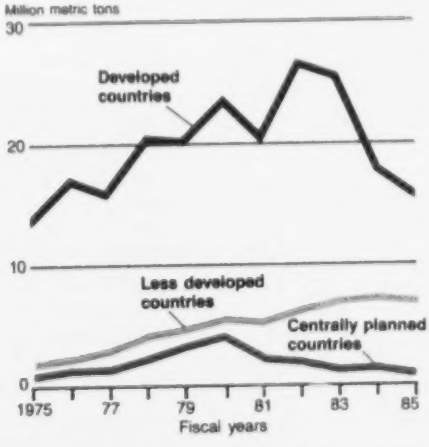
The reasons include faster population growth in the LDC's, faster growing economies in many cases (Taiwan and South Korea being prime examples), the prospective need for more feed grains and oilseeds to support emerging meat animal sectors, and resource limitations that may preclude agricultural self-sufficiency. In addition, the populations of the LDC's are not as well fed as people in developed nations, so they tend to spend a fairly large portion of any additional income on food.

"Our traditional customers remain very important," concludes MacDonald. "But we also have to recognize the increased role of our important Third World customers and the large potential role of the rest of the less developed world. Self-interest alone dictates that we pay close attention to their various needs and concerns in such areas as open markets for their products, debt relief, and economic development." □

U.S. Grain and Feed Exports to:



U.S. Oilseed Exports to:



Developed country markets include Western Europe, Canada, Japan, Australia, New Zealand, Israel, and South Africa. Centrally planned markets include the USSR, Eastern Europe, and China. Less developed country markets are all others.

AGRICULTURAL ROUNDUP

EC Cuts Its Support Prices

Influenced by lower world prices, the European Community has reduced its support prices for feed grains by 5 percent for the marketing year that began July 1. The reduction covers oats, rye, barley, sorghum, and feed-quality wheat, but not corn.

"EC farmers will also be assessed a 3-percent tax on any grain they market, and stricter quality standards will be set for grain sold to EC governments under support programs," says USDA economist Stephen Sposato of the Economic Research Service. "The overall effect of these measures will be to reduce market grain prices in the EC by an estimated 9 to 12 percent."

From the American perspective, reduced EC prices are a step in the right direction. In recent years, high support prices have encouraged investment in farm equipment and research into new crop varieties, contributing to overproduction in the EC. However, because of new crop varieties and increasing farm size and efficiency, lower supports may, at best, only slow the rate of growth in EC production, says Sposato.

He notes that the EC price cut comes "in partial response to reduced U.S. loan rates under the 1985 farm bill (Food Security Act)." Lower U.S. loan rates have had a significant effect on world prices for grains. World wheat prices have declined 16 percent and feed grain prices about 12 percent when compared with fiscal 1985.

Another factor is the decline in the value of the dollar measured against European currencies. "Prices in the world grain market are quoted in U.S. dollars," says Sposato. "At current grain prices and exchange rates, every 1-percent decline in the value of the U.S. dollar adds about $12 to the cost of exporting a ton of EC wheat."

Sposato estimates that, with forecast world grain prices of between $90 to $100 per ton over the next 5 years, an additional $600 million annually would be added to the costs of the EC budget—if the EC tried to maintain prices in the face of recent dollar declines.

"The pressure of declining world market prices on the EC budget was not entirely unforeseen. Near-record grain stocks of 22.5 million tons at last season's end were causing considerable concern," Sposato says. "Yet a 5-percent reduction in prices, when the original proposal was for constant prices, is almost unprecedented. Why the change? It appears that the EC decided to make up a revenue shortfall of some $1 to $2 billion in total agricultural expenditures by altering its agricultural outlays. EC officials chose to do this largely in the grains sector."

But the price cut won't head off the EC's growing worries over its budget. "For one thing, the grains sector alone can't absorb shocks to an agricultural budget totaling more than $20 billion," Sposato says. And the budget pressure could get worse, he adds.

"For the near term, a weaker dollar, large European production, and the prevalence of low world prices influenced by the new market-oriented U.S. policies will lead the EC to increasing budgetary difficulties."

Leaders

America's Favorite Fresh Fruits: 1985's Leaders in Per Capita Consumption

	Per capita consumption			Change,
	1970	1980	1985	1970-85
	pounds per person[1]			
Bananas	17.6	20.8	25.6	+45%
Apples	16.3	18.3	17.4	+7%
Oranges	15.7	15.3	12.0	−24%
Grapes	2.5	3.3	6.3	+152%
Grapefruit	8.0	7.8	5.5	−31%
Peaches	5.6	5.4	3.8	−32%
Lemons and limes	2.1	2.3	2.9	+38%
Strawberries	1.6	1.9	2.9	+81%
Pears	1.9	2.3	2.7	+42%
Avocados	.4	.8	1.7	+325%
Nectarines	.6	1.5	1.6	+167%
Plums and prunes	1.4	1.5	1.5	+7%
Pineapples	.7	1.4	1.4	+100%

[1]Retail weight basis. 1985 data are preliminary estimates.

America's Favorite Fresh Vegetables: 1985's Leaders in Per Capita Consumption

	Per capita consumption			Change,
	1970	1980	1985	1970-85
	pounds per person[1]			
Lettuce	20.8	24.9	23.7	+14%
Onions	11.5	9.3	17.9	+56%
Tomatoes	10.5	11.4	13.4	+28%
Cabbage[2]	8.2	8.0	—	—
Carrots	5.7	6.8	7.4	+30%
Corn	7.3	6.6	7.1	−3%
Celery	6.7	7.3	6.9	+3%
Cucumbers[2]	2.9	4.0	—	—
Green peppers[2]	2.2	3.3	—	—
Broccoli	.5	1.5	2.6	+420%
Green beans[2]	1.6	1.4	—	—
Cauliflower	.6	1.2	2.0	+233%

[1]Retail weight basis. 1985 data are preliminary estimates. [2]Data not reported by USDA since 1981.

Double-Cropping in the Southeast

Nearly 30 percent of the soybean acreage in the southeastern United States is double-cropped with wheat. The figure exceeded 40 percent in at least one year—1982. Back in 1970, southeastern farmers double-cropped less than 20 percent of their soybean acreage.

In the typical system, farmers plant wheat in the fall after harvesting their soybeans. They harvest the wheat in the late spring or early summer just in time to plant a soybean crop. The additional income from harvesting wheat on the soybean field in the "off-season" potentially increases their returns.

But double-cropping requires specialized management skills, and there is more risk of reduced soybean yields. That risk must be balanced against the expected increase in net revenue from the two crops.

Conservation tillage has become one of the key strategies for reducing the risk of lower yields. Available evidence suggests that the use of conservation tillage has expanded dramatically among soybean producers, and particularly among those who double-crop. Conservation tillage is quicker than conventional tillage—an important advantage in double-cropping because of the overlap in harvesting the wheat and planting the soybeans. That shortens the growing season for soybeans, potentially reducing the yield.

The increased feasibility of double-cropping wheat and soybeans has raised the relative importance of southeastern wheat production. In the early 1970's, the Southeast produced 25 percent of total U.S. soft winter wheat. By the early 1980's, this share had risen to more than 40 percent. The double-cropped acreage has also increased the nation's overall production of soft red winter wheat, a crop in surplus since 1970.

Double-Cropping Wheat and Soybeans in the Southeast: Input Use and Patterns of Adoption *by Michele Marra and Gerald Carlson. (Published June 1986; 18 pages of text and data tables; GPO Stock No. 001-019-00453-3; $1.25.)*

Selling to Mexico

Mexico's farm imports from the United States have been above $1 billion each year since 1979, despite economic difficulties exacerbated by plunging oil prices. And Mexico will continue to rely on the infusion of imports from American farmers to feed a rapidly growing population.

That's the assessment presented in a report recently published by USDA's Economic Research Service. The report relates how the oil boom of the 1970's boosted Mexico into the ranks of the top five importers of U.S. farm products.

"Mexico's discovery and exploitation of its huge oil reserves largely led to a strong upsurge in food demand in the 1970's," says economist Myles Mielke, one of the authors.

Basic commodities—corn, dry beans, sorghum, wheat, soybeans, sunflower seed, inedible tallow, and nonfat dry milk—make up most of Mexico's imports. "The United States currently supplies nearly all of each of these commodities, except for wheat and nonfat dry milk, which come primarily from other suppliers," Mielke says.

"Mexico has been attempting to diversify its foreign suppliers," Mielke notes, "but in its present financial difficulties U.S. products are attractive because of the generous credit terms extended to Mexico. Those credit guarantees have been an effective tool for substantial U.S. exports of grains and oilseeds to Mexico."

Mielke forecasts, however, that imports of nonbasic items, including U.S. livestock, horticultural products, and processed commodities, will be reduced in the next few years. Such reductions reflect slower economic growth, the erosion of Mexico's foreign exchange earnings—caused by falling oil prices—and the country's consequent problems in paying interest on a nearly $100-billion foreign debt.

Mexico: An Export Market Profile *by Donna H. Roberts and Myles J. Mielke. (Published May 1986; 57 pages of text and tables; GPO Stock No. 001-019-00440-1; $3.25.)*

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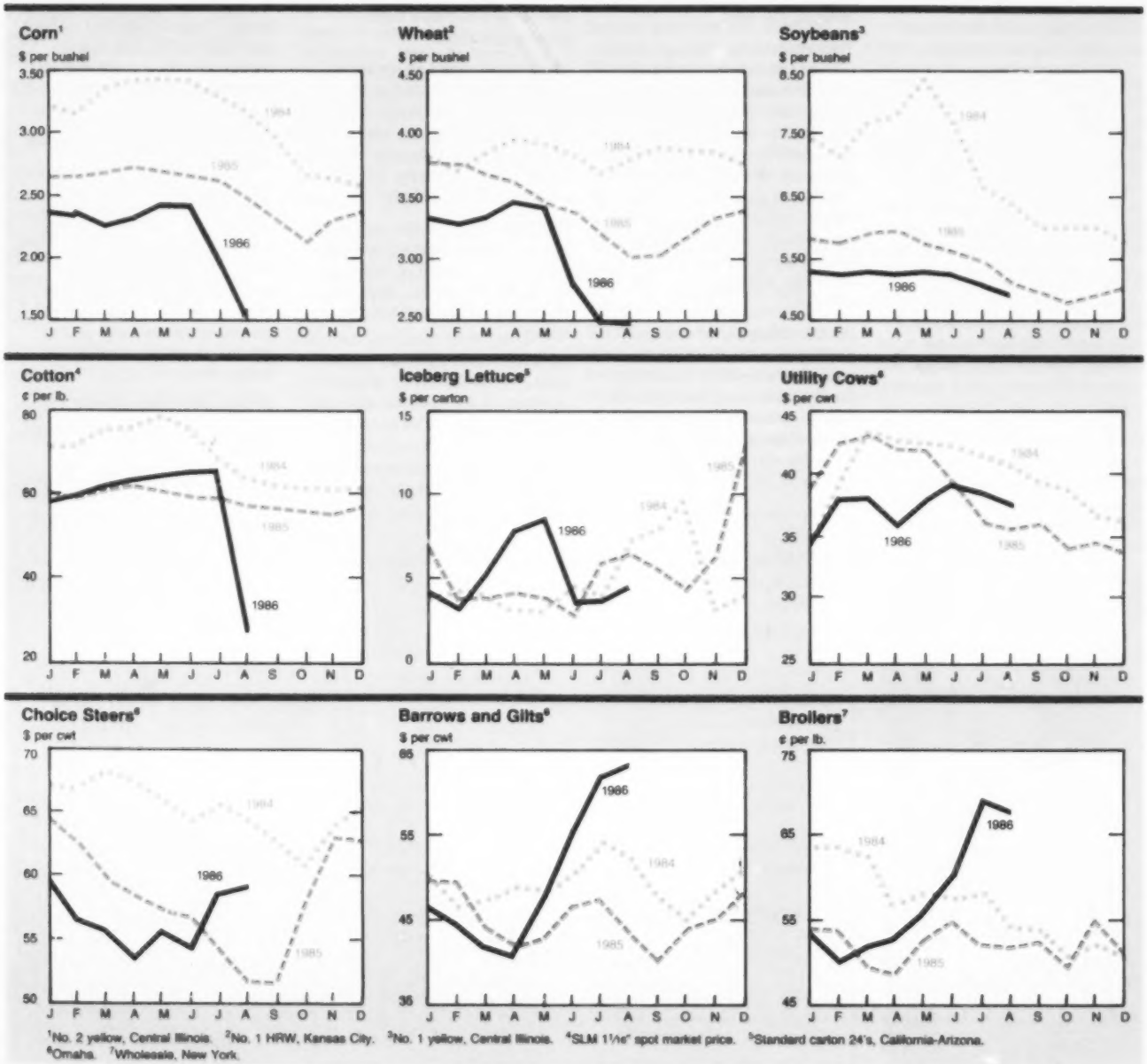
Refund

Monthly Price Monitor

USDA's August index of farm prices remained unchanged from July but was 3.3% above its year-earlier level. Corn prices sagged to $1.53 per bushel because of the certificate program, the lower loan rate, and prospects for a large harvest. Wheat held steady at $2.48, while soybeans were down 20¢ from July's average of $5.15. Cotton plunged to 26.8¢ from July's 65.7¢ a lb. as U.S. prices began reflecting world cotton prices. In the meat animals area, utility cows were down 76¢ to $37.62 per cwt, while choice steers increased to $59.02. Barrows and gilts rose to $63.68, up $20 from their August 1985 price. Broilers eased off slightly to 67.6¢ a lb., down 1½¢ from July's high but more than 15¢ above their year-ago level. All prices shown are monthly averages.



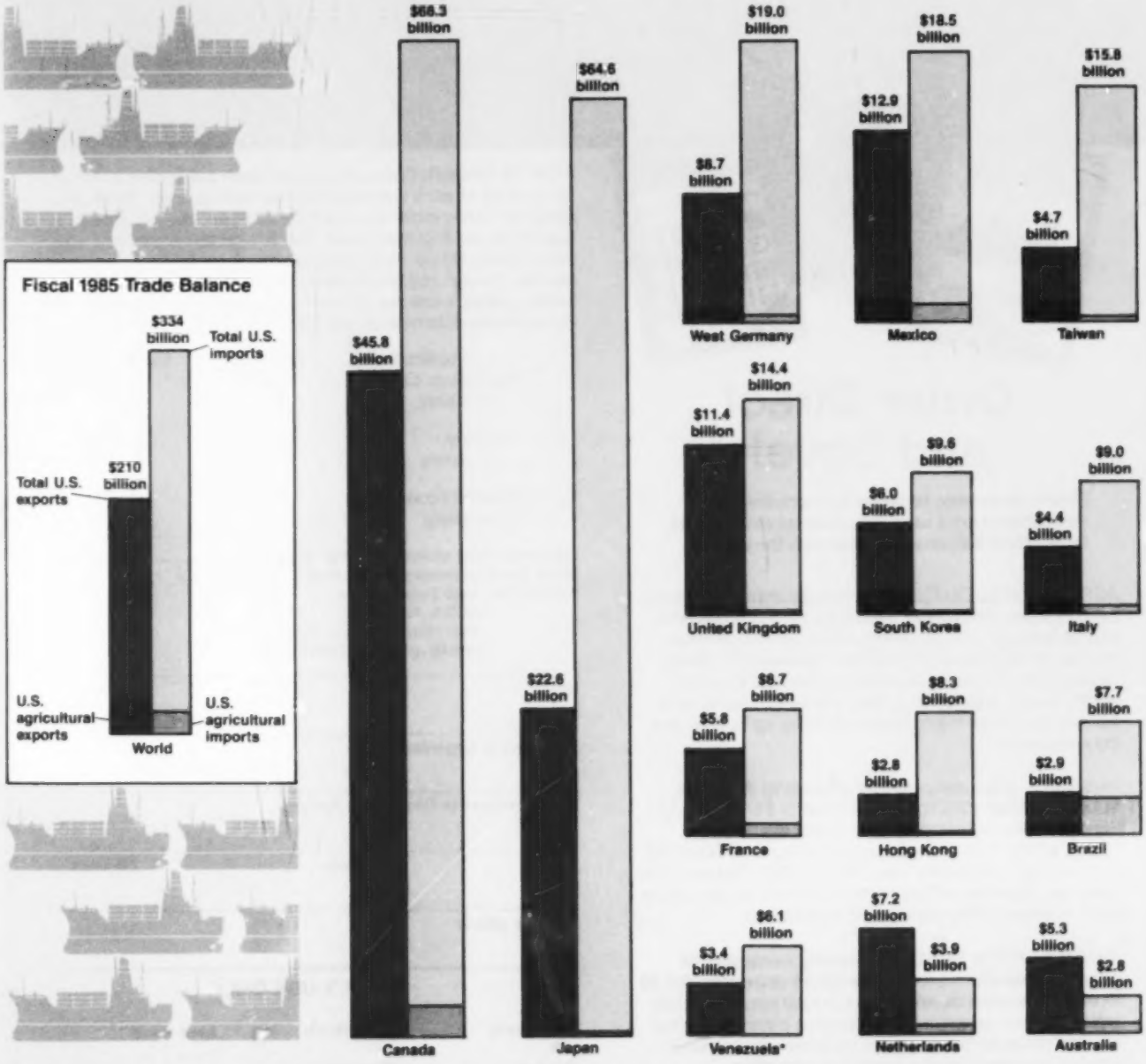
[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1⅛" spot market price. [5]Standard carton 24's, California-Arizona. [6]Omaha. [7]Wholesale, New York.

Tracking U.S. Trade Deficits

Large U.S. trade deficits around the world now dwarf the positive contribution agriculture still makes to the nation's trade position. The U.S. deficit in total merchandise trade (nonfarm and farm goods) added up to more than $120 billion in fiscal 1985, as $334 billion worth of imports overshadowed $210 billion in exports.

The U.S.-Japanese imbalance accounted for a third of the overall deficit, but Japan wasn't the only problem. Most of our other major trading relationships also contributed to the deficit. The charts below present dollar figures for fiscal 1985 U.S. exports to, and imports from, several of our biggest trading partners.

While U.S. surpluses with other nations are few and far between, farm trade remains an important exception. U.S. agricultural exports continue to bring in more money than Americans spend on ag imports. True, the U.S. farm trade surplus has been shrinking. It declined to $11.5 billion last year, and it's expected to shrink to around $6 billion this year (the smallest surplus since 1972). In May 1986, the ag trade balance even slipped into the red for the first time in 15 years. But one or two monthly deficits won't tip the scales, say analysts. America's ag trade balance will still end up positive for 1986, and surpluses are expected to remain the rule for the foreseeable future.



Data are for the fiscal 1985 year (Oct. 1, 1984-Sept. 30, 1985) and were provided by economist Tom Warden of the Economic Research Service. Data cover only merchandise trade. Imports based on customs value. *U.S. agricultural imports from Venezuela were valued at less than $50 million.

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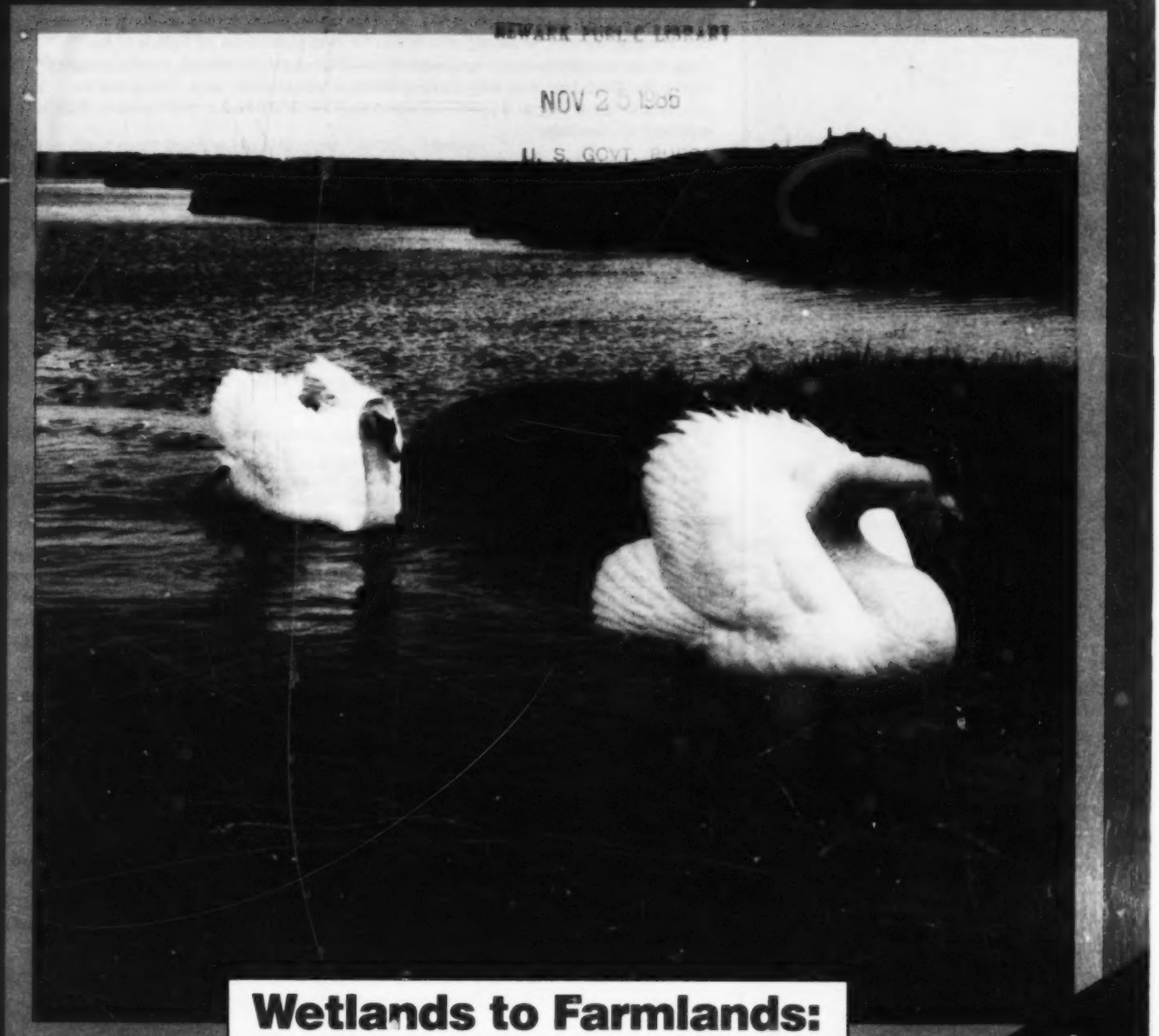

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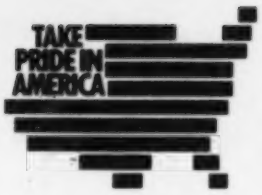

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PERSPECTIVES

GATT TALKS ARE OFF TO A GOOD START, but don't expect immediate results. It's going to be a long, rough road ahead.

In late September, representatives of most of the major trading nations sat down in Punta del Este, Uruguay, agreeing to put export subsidies for farm products on the agenda of new negotiations just getting started in Geneva, Switzerland. But U.S. officials heaving a sigh of relief at this development are taking a deep breath as well in anticipation of talks that are scheduled to last as long as 4 years. Any agreements reached probably won't become effective until talks are concluded.

The preliminary Uruguay meeting set forth several general goals in regard to the agricultural agenda to be discussed in Geneva. Trade negotiators agreed to work toward liberalizing farm trade by improving market access, discouraging the use of subsidies and other measures impeding agricultural trade, and bringing agriculture more under the guidelines of the General Agreement on Tariffs and Trade (GATT), which sets the ground rules for world trade.

From the U.S. perspective, those goals could be met by curbing export subsidies and nontariff barriers to trade like volume import restrictions, licensing requirements, and health and safety rules. Some subsidies, say U.S. officials, constitute unfair competition and have been used by others to capture ever-greater shares of world export markets.

EC ministers counter that U.S. deficiency payments to farmers also subsidize U.S. farm exports.

"What this means is that all forms of government assistance to agriculture could be on the negotiating table," says economist Nicole Ballenger of USDA's Economic Research Service. And that is certain to worry some farm commodity groups in the United States. A recent study by the World Bank indicates that several U.S. commodities—such as coarse grains and ruminant meats—would benefit from lower levels of global protectionism, while other commodities, such as dairy and sugar, would suffer.

These issues are sure to be complicated by the concerns of developing countries, who want open access to the markets of the industrialized nations. Many of these countries have enjoyed preferential treatment for many of their exports, for example, and would be unwilling to lose this special status. The U.S. position is that some of these countries, at least, should be "graduated" to being treated as regular members of GATT.

Since its founding in 1947, GATT has provided the framework for world trade and has been a forum for resolving trade disputes among major trading nations. Currently, 92 nations belong to GATT, and another 30 countries observe its provisions. Together, they account for about four-fifths of world trade.

The United States has other interests, of course, in the GATT talks. In fact, agriculture is only one of a dozen other trade topics to be debated. In the current talks, services as well as agriculture are likely to be the most combative issues. U.S. officials are expected to make a concerted effort to broaden GATT trade rules to include the burgeoning field of services, such as financial, insurance, legal, maritime, and construction services. U.S. multinational firms are far ahead of most other nations in providing these services to the world. But many developing countries are highly protective of their emerging service industries and may be reluctant to expose them to international competition under GATT's guidelines.

The general objective of GATT is to lower barriers to world trade, but agriculture has been exempted from many of GATT's trade rules, and services have only recently become a significant trade issue.

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Wetlands to Farmlands: Curbing the Conversion *by Mark Brohan* 4

"Swampbusting"—converting wetlands for farming—once seemed like the best thing to do with swamps and marshes. But the thinking has changed, and that's why the 1985 farm bill carries a built-in penalty for swampbusters.

Where the Export Decline Hits Hardest *by Doug Martinez* 6

The sharp downturn in U.S. agricultural exports has had ripple effects in the farming communities that depend on sales of "export-oriented" crops. A recent study identifies 420 export-dependent rural counties, with the heaviest concentrations in the Delta and Corn Belt.

Why Labor Gets More of the Food Dollar Than Farmers *by Eric Van Chantfort* 12

The cost of labor to transform farm commodities into consumer-ready foods is taking an increasing share of the food dollar, while the share going back to farmers is declining. The reasons can be found on the farm, in the food factories, and on today's menu.

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Wetlands to Farmlands: Curbing the Conversion

Some people think of swamps and marshes as dark, forbidding places teeming with mosquitos, snakes, and possibly alligators. Others think of them as excellent locations for fishing, hunting, and boating.

According to economists Ralph Heimlich and Linda Langner of USDA's Economic Research Service, there's more to America's wetlands—lowland areas filled with moisture—than either image might suggest. The economists note that wetlands are a valuable natural resource—a fact that goes a long way in explaining the new "swampbuster" provision in the 1985 farm bill (Food Security Act).

In past decades, millions of acres of swamps and marshes have been drained for agricultural conversion and other purposes. Heimlich and Langner estimate that U.S. wetlands now cover about 99 million acres, down from somewhere between 127 and 215 million acres in the 1800's.

"Swampbusting—converting wetlands for farming—began before the turn of the century. Only recently has it come to be viewed as harmful to the environment," explains Heimlich. "Historically, swamps and marshes have been thought of negatively, as land that had to be reclaimed and made productive."

Langner says that early government programs led to swampbusting. Federal surveys prior to 1948 focused on areas where swamps and marshes were drained for reasons of public health and agricultural development. Direct government assistance for agricultural conversion was available until 1978.

But the thinking has changed, and so have the laws. The farm bill stipulates that farmers who swampbust will lose their eligibility for farm program benefits, including USDA price support programs, disaster payments, crop insurance, Farmers Home Administration loans, Commodity Credit Corporation storage payments, and farm storage facility loans.

"The availability of farm program benefits conflicted with other government policies that encouraged wetlands conservation," Langner says. "The new provisions are designed to make the policies consistent."

Value of Wetlands

Wetlands serve a variety of economic and ecological purposes. According to the Soil Conservation Society of America, a nonprofit organization that promotes conservation of land and water resources, wetlands can reduce the risk of flooding. They store water during periods of high stream and river flow and release it back gradually.

Swamps and marshes also improve water quality because they trap sediment, sewage, and pollutants. This ability to absorb water also enables wetlands to help stabilize shorelines against erosion and storm damage.

Wetlands provide another important benefit: They're home for a multitude of plants and animals. Approximately two-thirds of all commercial fish—including bluefish and striped bass—spawn in estuaries and marshes.

Freshwater wetlands are critical feeding, spawning, and nursery grounds for bass, northern pike, and perch. Saltwater marshes are home for 15 leading commercial fish and shellfish such as crabs, shrimp, and oysters.

The new swampbuster sanctions may be more effective in upper Midwestern states where government payments are a larger percentage of net farm income.

At least 50 fur-bearing animals such as muskrat and mink live in swamps and marshes. But waterfowl are most closely associated with them. Ducks and geese depend on northern wetlands as their main breeding grounds.

Where there's marsh, there's also economic value. The 1980 harvest value of animal hides trapped in wetlands totaled about $94 million. The value of the saltwater fish catch that same year was about $1 billion.

Of America's 78 Million Acres of Privately Owned Wetlands, 5.1 Million Acres Have a High or Medium Potential for Agricultural Conversion*

*Excludes Alaska, Hawaii, and the District of Columbia.
Source: USDA Soil Conservation Service, 1982 Natural Resources Inventory.

In past decades, millions of acres of swamps and marshes have been drained for agricultural conversion. New farm bill provisions are designed to discourage this.

According to the economists, swampbusting threatens wildlife areas in Florida, North Carolina, some upper Midwestern states including Nebraska and North Dakota, and lower Mississippi River states such as Arkansas, Mississippi, and Louisiana.

Converting Wetlands for Farming

Farmers generally convert their land when revenue or anticipated revenue from expanded crop production means increased profit. Heimlich and Langner estimate that about 43 million acres of the remaining 99 million acres of U.S. wetlands (78 million acres are privately owned) could be farmed if drained. Of that total, about 5.1 million acres have a high or medium potential for conversion, according to USDA's Soil Conservation Service.

"Economic conditions, to some extent, have reduced the amount of wetlands being drained in recent years," says Langner. "But this is a short-term condition. In the long run, there is still the potential for increased swampbusting."

Whether or not farmers will drain more wetlands is an unanswered question, suggest the analysts. They note that drainage will probably continue for such purposes as timber harvesting, stream channelization, and removing isolated swamps or marshlands from farmland already in production.

But conversion costs vary widely, depending on the type of wetland owned. Costs can range from less than $20 an acre for farmers using their own equipment in parts of the upper Midwest to more than $200 an acre in some North Carolina marshlands.

According to Heimlich, swamps and marshes located in upland areas are the type most frequently drained for farming. He estimates that about 14-22 million acres of wetlands—if converted for farming and enrolled in price support programs—could have given positive returns above operating and conversion costs in 1985.

The new swampbuster provisions affect the economics of conversion only for the farms and commodities that qualify for government programs. Participation in these programs varies widely from region to region. The economists predict that swampbuster sanctions will be more effective in upper Midwestern states, like Nebraska and North Dakota, where government payments are a larger percentage of net farm income.

High conversion costs and changes in the tax code will likely be greater obstacles to future wetlands drainage, Heimlich says. Until recently, federal income tax law allowed an operator to deduct up to $5,000 from net farm income for land-clearing expenses, and up to $25,000 of gross farm income for soil and conservation expenses. Other expenses could be deducted as depreciation allowances, and favorable capital gains treatment was available when converted wetlands were sold.

The new tax reform legislation eliminates these deductions for farm investments, including the incentives that have encouraged the conversion of wetlands.

The economists suggest, however, that agricultural conversion will remain a potential threat to U.S. wetlands. And future budget concerns could limit the government's direct role in protecting them through such efforts as USDA's Water Bank Program and the Interior Department's Easement and Purchasing Program.

"Denying farm program benefits for wetlands conversion and reduced tax incentives will help preserve our wetlands for the time being," say the economists. "But these actions may be less effective if commodity prices rise significantly in the future." □

[Based on information supplied by economists Ralph Heimlich and Linda Langner of the Natural Resource Economics Division, Economic Research Service.]

For More Info

A recent report by economists Ralph Heimlich and Linda Langner deals extensively with the potential for wetlands conversion and the impact of the swampbuster provision. Copies of ***Swampbusting: Wetland Conversion and Farm Programs*** can be purchased for $2.00 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Ask for the report by title and stock number: 001-019-00459-2. For faster service, call the Government Printing Office order desk at (202) 783-3238.

Where the Export Decline Hits Hardest

The sharp downturn in U.S. agricultural exports since 1981 has probably had the most negative impact on farming communities in the Delta and Corn Belt states, where large numbers of counties produce crops for foreign markets.

"These are the regions most vulnerable to the decreased demand for U.S. farm exports," says economist Judith Sommer of USDA's Economic Research Service. "More than 40 percent of the nonmetro counties in each region received at least half of their value of farm sales from export-oriented commodities."

The Delta states consist of Arkansas, Louisiana, and Mississippi. The Corn Belt includes Illinois, Indiana, Iowa, Missouri, and Ohio.

The number of farming communities dependent on export crops is somewhat smaller, but still very significant, in the Northern Plains (North Dakota, South Dakota, Nebraska, and Kansas) and Southern Plains (Oklahoma and Texas).

Across the nation, says Sommer, there were 420 counties in 1982 (one of every six nonmetropolitan counties) in which 50 percent or more of total farm sales came from just five "export-oriented" crops—corn, wheat, soybeans, cotton, and rice. Although each of these commodities also has a sizable domestic market, exports play a major role in determining overall demand and U.S. farm prices. "Therefore, such counties," she says, "can usually be considered export-dependent."

The impact, and implications, of belonging to this group reach beyond the individual farm family to the rest of the rural community—from the farm implement businesses on Main Street to the local banks carrying loans for producers hurt by falling exports.

Ripple Effect

The ripple effect is particularly pronounced when the county's livelihood depends heavily on the export-oriented farms.

"When farmers are in trouble, there's not much else to fall back on in many of these areas," says Sommer. "The community's entire economy may be based on farm commodities with erratic or depressed sales, and farmers don't really have other nonfarm alternatives. In these places, the nonfarm businesses count the troubled farmers as their largest and most important customers."

Across the nation, 420 counties received 50 percent or more of total farm sales from just five "export-oriented" crops.

That's true, for instance, in Quitman County, Mississippi, where nearly 100 percent of farm sales are from export-oriented crops (primarily cotton and soybeans).

For other export-dependent counties, especially those located near larger towns and cities, the fall in farmers' income may be cushioned by the off-farm employment of its residents.

An example is Grundy County, Illinois. Sales of corn and soybeans accounted for 90 percent of farm sales in 1982. But Grundy County is located on the fringe of the Chicago metropolitan area, and roughly a third of its workers are employed in manufacturing jobs.

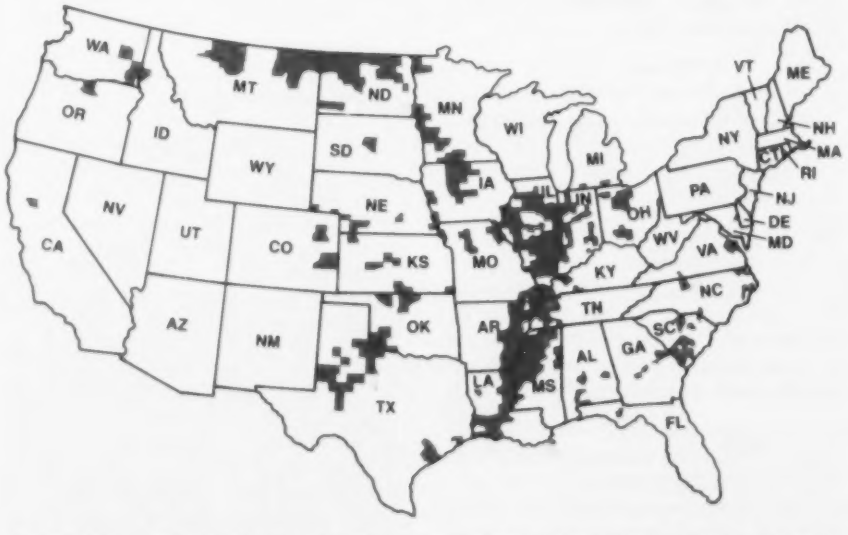
Of course, weak demand and prices for farm commodities hurt all growers, not just those in remote rural areas or in counties classified as export-dependent.

Sommer, however, is focusing on areas where the concentration of highly vulnerable farms tends to magnify the impact. "When so many farmers in one area are producing export-oriented crops, a lot of them will be hurt, and that will have a negative, multiplier effect on their community," she says.

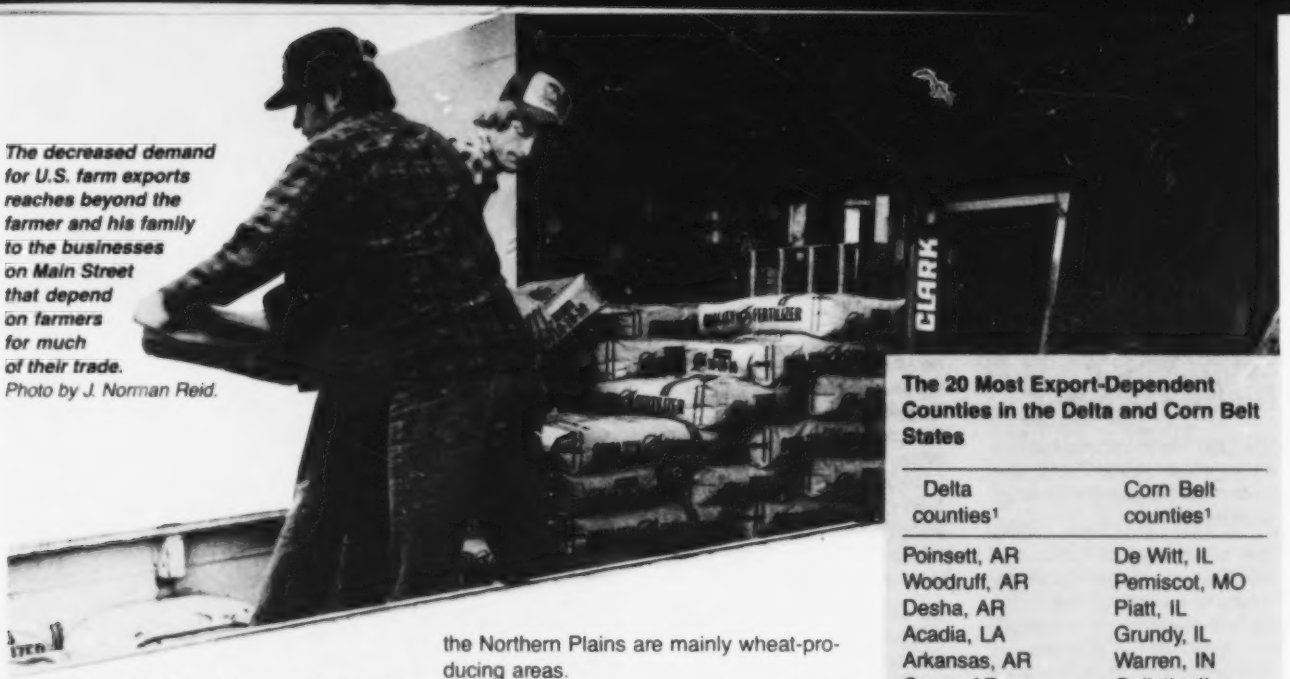
Delta Most Dependent

Clearly, she adds, "the Delta region has been the most dependent on sales of the five export-oriented commodities." More than half, 51.8 percent or $2.9 billion, of farm sales in nonmetro Delta counties in 1982 were derived from soybeans, cotton, rice, and, to a much lesser extent, corn and wheat.

Export-Dependent Counties Are Concentrated in the Corn Belt and Delta States*



*Counties were classified as export-dependent when 50 percent or more of their farm sales in 1982 consisted of "export-oriented" crops—corn, soybeans, wheat, cotton, and rice.



The decreased demand for U.S. farm exports reaches beyond the farmer and his family to the businesses on Main Street that depend on farmers for much of their trade.
Photo by J. Norman Reid.

Although the Delta region was the most dependent on farm exports in percentage terms, the dollar sales of export-oriented commodities in the Corn Belt were actually more than three and one-half times as great. Nonmetro counties in the Corn Belt generated $10.8 billion, or 47.8 percent of total farm sales, from production of the five commodities (primarily corn and soybeans).

The Northern Plains ranked second among U.S. farm production regions in dollar value of export-oriented commodities, marketing more than $5 billion of corn, wheat, and soybeans—or 30 percent of its total farm sales value—in 1982.

The smaller clusters of export-dependent counties in the Southern Plains states grow primarily cotton and wheat, while those in the Northern Plains are mainly wheat-producing areas.

In 1982, she goes on to say, the 420 export-dependent counties sold $20.4 billion of farm products. Of that amount, $13.8 billion consisted of sales of the five export-oriented crops.

U.S. export volume of grains and cotton is expected to rise significantly in the year ahead, but Sommer isn't sure whether the impact will be felt by farming communities in export-dependent regions.

Volume increases could be offset by lower prices, according to trade analysts. They predict that a sustained recovery in export sales may still be a year or two away. □

[Based primarily on information provided by Judith Sommer of the Agriculture and Rural Economics Division, Economic Research Service.]

The 20 Most Export-Dependent Counties in the Delta and Corn Belt States

Delta counties[1]	Corn Belt counties[1]
Poinsett, AR	De Witt, IL
Woodruff, AR	Pemiscot, MO
Desha, AR	Piatt, IL
Acadia, LA	Grundy, IL
Arkansas, AR	Warren, IN
Cross, AR	Gallatin, IL
Ashley, AR	Lawrence, IL
Quitman, MS	Vermilion, IL
Jefferson Davis, LA	Benton, IN
Monroe, AR	Christian, IL
St. Francis, AR	Coles, IL
Vermillion, LA	Mason, IL
East Carroll, LA	Douglas, IL
Jackson, AR	Ford, IL
Lee, AR	Alexander, IL
Coahoma, MS	Logan, IL
Phillips, AR	Butler, MO
Tensas, LA	Newton, IN
Madison, LA	Stark, IL
Leflore, MS	Edgar, IL

[1]Based on Census of Agriculture data, Delta counties were estimated to be more export-dependent than Corn Belt counties, largely because the livestock sector is more important in the Corn Belt than the Delta.

Big Five Export Crops

Although U.S. farm exports doubled in value from 1975 to 1981—increasing from $22 billion to $44 billion—export sales of farm commodities had fallen nearly 30 percent from their 1981 high by the end of 1985, says USDA economist Judith Sommer.

Farm communities dependent on sales of corn, wheat, soybeans, cotton, and rice know what this means.

"Together, these five commodities accounted for 53 percent of the growth in U.S. farm trade from 1975 to 1981 and 76 percent of the subsequent decline," Sommer says.

In the peak year of 1981, these five export-oriented crops comprised 59 percent of U.S. farm exports. They made up more than half of U.S. farm exports in 1985, albeit of a much smaller volume.

The importance of international sales from the five farm products is demonstrated by the significant share of U.S. production sold in world markets.

Sommer points out that in the last 5 marketing years, an average of 54 percent of U.S. wheat production was marketed abroad. During the same marketing years, 26 percent of U.S. corn production was exported, 40 percent of soybeans, 47 percent of cotton, and 49 percent of rice.

U.S. exports also contributed heavily to total world trade in these commodities. In the marketing years from 1981 to 1985, U.S. wheat exports, on average, made up 36 percent of world wheat exports. The percentages for the other crops were: corn, 72 percent; soybeans, 52 percent; cotton, 28 percent; and rice, 18 percent.

"These figures suggest the impact that changes in international trade may have on U.S. producers of these commodities, their communities, and even large geographic regions," says Sommer.

AGRICULTURAL ROUNDUP

Latin Debt: A Global Impact

The large foreign debts of Latin American nations are likely to pose problems in the global community for years to come.

"It is already apparent that Latin debt difficulties represent a problem not just for the international banks, but for the entire world economy," says economist Elaine Grigsby of USDA's Economic Research Service.

For the United States, the most immediate impact has been the continuing falloff in U.S. exports to Latin nations, according to Grigsby and her colleague, economist Emilio Pagoulatos of the University of Nebraska.

Latin countries were a rapidly growing export market for U.S. agriculture during the 1970's, but this trend has been reversed. The total value of U.S. agricultural exports to Latin America was 33 percent lower in fiscal 1985 than in fiscal 1981. That decline roughly matched the overall drop in U.S. farm sales abroad during the same time span.

Recent estimates indicate that U.S. sales to the region may have fallen another 20 percent or so in fiscal 1986, which just ended on September 30. That may exceed the percentage decline in total U.S. farm exports to all markets for 1986.

U.S. farm sales to the region could be hurt even more if growth in Latin economies continues to slow or stagnate. Ultimately, Latin debtor nations could experience severe declines in standards of living and further isolation from world trading channels.

"Resolution of this debt crisis will require sustained efforts over a substantial period of time," says Grigsby.

Of the world's 15 major debtor nations, 10 are Latin American.

And the four largest debtors among the developing countries are Latin as well: Brazil owes $107 billion, Mexico $99 billion, Argentina $50 billion, and Venezuela $33 billion. Several of these countries have been forced by economic circumstance to defer payment of principal and to reschedule their loans at more lenient terms.

Certainly, says Grigsby, some progress has been made in dealing with the debt.

"Unlike the 1930's, when many Latin nations defaulted on their debt payments, most of these countries have made efforts to service their debt," she notes.

Another difference, though, is that the debts of the 1980's are intricately linked to a more integrated world economy, where the consequences of default would not be limited to the Latin debtors.

For Latin nations, this growing global connection meant ready access to capital markets and very high growth rates during the 1970's. That ended in the early 1980's when several economic shocks rippled through financial markets. Chief among them were restrictive monetary policies in the industrialized nations and the prolonged world recession following a major oil price increase in 1979-80.

"That led to a sharp decline in world demand for the exports of the developing countries," says Grigsby, "as well as increased protectionism in industrialized countries and a drop in the real prices of commodities that many developing countries export."

The oil price shock at the end of the decade was followed by a sharp jump in real interest rates and a surge in "capital flight" from Latin countries.

"Finally, some responsibility for the debt crisis rests with the commercial banks in industrialized countries," says Grigsby. "Some of the excessive borrowing by the developing countries in the 1970's appears to have been abetted by the banks' competition for loans. Also, since 1982, the international debt problem has been aggravated by the withdrawal of banks from international lending."

The world community—notably through the International Monetary Fund (IMF)—has responded to the crisis by rescheduling payment of debt owed to commercial banks by Latin American governments. Such debt includes private-sector debt guaranteed by the governments of Latin countries.

"The debtor countries have had to adopt austerity measures to meet IMF loan conditions," Grigsby says. These measures have included real currency devaluations, wage controls, and import restrictions.

Latin countries have had some success in making these adjustments to improve their trade balances, but reductions in food and capital goods imports have had some adverse effects.

"The standard of living has fallen because of reductions in income, and productive capacity has been reduced by a fall in gross capital formation," Grigsby says.

She adds that fiscal austerity measures, combined with other economic stabilization policies and the decrease in savings, have also put pressure on Latin America by reducing the growth of real output and impairing growth prospects.

Moreover, "the recent decline in oil prices has served as a reminder of the continuing weak financial position of several Latin American oil exporters and their vulnerability to adverse external conditions," she says.

"These developments underscore the fragility and the contradictions of the adjustment process in Latin America. The remarkable improvement of Latin American trade balances enables these countries to earn the foreign exchange to make some payments on their foreign debt in the short run. However, if domestic investment is reduced, this may impair their ability to pay their debt in the future."

"It seems unrealistic," Grigsby says, "to expect domestic economic growth in Latin nations while they are expected to cut imports (often machinery and other capital goods needed to improve productivity), increase exports, cut fiscal deficits, and make interest payments at the same time."

Sharper Drop In Farm Numbers

The number of American farms declined by 60,310 units between 1985 and 1986, according to USDA's latest estimate. This would represent the largest 1-year decline in farm numbers in more than a decade, reports statistician Van Johnson of USDA's National Agricultural Statistics Service.

The nation's farm count now stands at slightly above 2.2 million. Last year's number was closer to 2.3 million farms, and that was down from around 2.4 million in 1980 and more than 2.5 million in 1975.

Johnson also notes that the amount of land in farms dropped by roughly 7 million acres from 1985 to 1986, while average farm size increased to a record 455 acres, up from 446 acres last year. Average farm size continues to grow because much of the land released by farmers leaving the business is absorbed into other operations. As a result, the acreage in farming is declining at a slower rate than farm numbers.

In the late 1970's and early 1980's, it appeared that farm numbers might actually be leveling off after falling every year since the mid-1930's (numbers peaked at more than 6.8 million farms in 1935). In 1980 and 1981, two small increases in farm numbers were reported.

Then numbers turned down again, and the declines have accelerated in the last few years. The 2.7-percent drop from 1985 to 1986 was preceded by declines of 2.3 percent from 1984 to 1985, 1.8 percent from 1983 to 1984, and 1.3 percent from 1982 to 1983. Farm numbers dropped less than 1 percent a year on average from 1975 to 1980.

Economist Donn Reimund of the Economic Research Service suggests that the larger declines of late probably reflect the troubled financial conditions in agriculture.

"We saw large declines in the 1950's and 1960's," he says, "but that was a different situation. Then, we were going through a technological adjustment as a new generation of machinery reduced the labor requirements for farming and generated a big demand for farmland expansion. Farmers willing to quit could sell at a pretty good profit."

Today, he says, many of the farmers are leaving the business as debtors. Some are being forced out because they don't have the cash

Farm Numbers Dropped an Estimated 2.7% to 2.2 Million This Year

	Number of farms[1]	Percent change[2]
1976	2,497,270	−1.0%
1977	2,455,830	−1.7%
1978	2,436,250	−0.8%
1979	2,432,300	−0.2%
1980	2,432,510	+0.01%
1981	2,433,920	+0.1%
1982	2,400,550	−1.4%
1983	2,370,200	−1.3%
1984	2,328,400	−1.8%
1985	2,274,730	−2.3%
1986[3]	2,214,420	−2.7%

Source: National Agricultural Statistics Service.
[1]A farm is defined as a place that sells or could sell $1,000 or more of ag products during the year. [2]Percentage change from previous year. [3]Estimate.

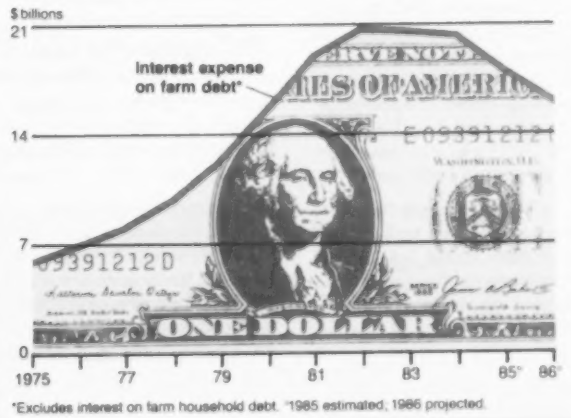
Gleanings

Farmers' expenses for interest on farm debt finally seem to be moving in a firm downward direction, observes economist Greg Hanson of the Economic Research Service. The farm sector's total interest expenses climbed from around $6.1 billion in 1975 to a peak of $21 billion in 1982 as interest rates rose and farmers took on additional billions of dollars of indebtedness to expand and upgrade their operations. The first significant drop in the interest bill came last year, Hanson says. Interest expenses declined an estimated 10% from 1984's $20.3 billion. He and other ERS analysts expect a further drop of 10%-13% this year.

. . . Hanson lists several reasons why these expenses are now easing off. Interest rates are down from the highs of the early 1980's, and farmers are reducing their overall debt burdens because of the threat that large debts have posed to farm profitability and survival. In addition, bankers are extending less credit and have written off substantial amounts of bad debt.

. . . the downward trend in interest payments (along with reduced expenses for fertilizer, fuel, and land) should help prop up future farm incomes, Hanson suggests. Spiraling interest expenses took a big bite out of net farm income during the last few years. From 1975 to 1979, farmers' interest expenses averaged $8.7 billion a year. In the first 5 years of the 1980's, the average was $19.3 billion. In other words, the sharp runup in interest expenses between the late 1970's and early 1980's slashed net farm income by an average of $10.6 billion a year. That's equivalent to more than one-third of total net farm income in 5 of the last 6 years. "The decline in interest expenses," concludes Hanson, "is a sign that much of the financial adjustment necessary to set the stage for recovery is now occurring."

The Farm Sector's Annual Interest Expenses Are Now Declining



*Excludes interest on farm household debt. *1985 estimated; 1986 projected.

reserves and can't get the refinancing to cover their current expenses and debt payments.

Reimund adds that the latest declines are heavily concentrated among farms with annual sales of $40,000 to $100,000. Such farms, he contends, are often too small to earn sufficient income from agriculture, but too large to operate on a part-time basis while the owner or manager holds an off-farm job.

Although most analysts agree that the present farm crisis is at least partly responsible for the accelerated drop in farm numbers, the recent declines have generally hit hardest outside the midwestern farm belt.

From 1985 to 1986, farm numbers fell in 36 states, held steady in 13, and increased only in Arizona, says statistician Van Johnson. Six states registered a combined loss of 33,000 farms, more than half of the total decline in U.S. farm numbers. Four of the six are along the nation's southern tier.

The greatest single decline was in Texas, where the number of farms dropped to an estimated 160,000, down 17,000 from 1985.

"The farm economy here is suffering just like it is in other parts of the country," says chief statistician Dennis Findley of the Texas Agricultural Statistics Service in Austin. He suggests, however, that the Texas showing may reflect a "catching up" with the agricultural depression in other areas. "Because of the diversified nature of Texas agriculture, the economic impact may simply have been a little slower in reaching Texas than it was in reaching the Midwest."

He also notes that some Texas farmers and ranchers have an additional problem: losses in revenues from oil leases on their land because of depressed oil and gas prices.

After Texas, the second largest decline in farm numbers occurred in Virginia, which lost 4,000 farms from 1985's 54,000. Declines of 3,000 farms were recorded in four states: Arkansas, which now has an estimated 50,000 farms; Illinois, with 87,000 farms; Minnesota, with 93,000 farms; and North Carolina, with 73,000 farms.

Where will farm numbers go from here?

"The biggest year-to-year declines may have already occurred," speculates economist Reimund. "In any case, the magnitude of the declines is likely to ease as the earning capacity of the land starts to buttress farmland values."

Reimund maintains that it is probably impossible to determine how much of the drop in farm numbers is related to financial stress and how much reflects the continuation of long-term structural change in U.S. agriculture.

"The trend toward fewer and larger farms has been going on for 50 years, and it will probably continue even when demand and prices in the farm sector improve," he says.

Three Crops May Be Better Than One

It may be time for some farmers to turn back the clock and reconsider the advantages of diversification, according to economist Michael Salassi of USDA's Economic Research Service.

Producing three or four commodities in place of one or two will not guarantee a profit, says Salassi, "but it is one method of reducing price risk in an uncertain economic environment."

Mixed-enterprise agriculture—a mix of crops, livestock, or both—used to be the norm for the traditional American family farm. Since World War II, however, the typical farm has been gradually transformed into a highly specialized production unit.

Specialization has its place, Salassi admits. It's an efficient way to concentrate the resources of the farm and its manager on one or two commodities for maximum volume and productivity.

Farmers' growing dependence on expensive machinery and the strong emphasis on maximizing output fostered specialization in the last few decades. At the same time, improved fertilizers and pesticides reduced the need for crop rotations, while new disease-fighting antibiotics helped open the door to specialized, large-scale animal agriculture.

There was also the relative security of rising government price supports as the mixed-enterprise midwestern farms of the 1940's and 1950's turned into the highly specialized corn-soybean operations of the 1970's and 1980's.

Many of these operations continue to thrive, but others have found that specialized agriculture and today's economic uncertainties don't mix. Increased variability in domestic and world prices, along with current policies to gradually reduce government price support levels, can expose the highly specialized producer to considerable price risk, Salassi says.

Analysts expect to see farmers experimenting with many different management strategies to cope with the increased risks. One of the strategies that can work for some farmers is diversification.

"If properly planned, diversification can help stabilize farm income and reduce the danger that a period of low prices for one commodity will threaten the survival of the entire farm business," Salassi says.

He tested these claims with a computer-simulated study matching Mississippi Delta farms producing cotton, rice, and soybeans with comparable—but less diversified—farms producing only rice and soybeans. He found that, over a projected 5-year period, the more diversified farms had higher average receipts, net cash incomes, and appreciation in net worth than the more specialized farms.

"Many of the factors that determine how profitably a farm operates are outside the farm manager's control," says Salassi. "One factor that the manager can control is diversification, which also appears to increase the chances of remaining financially viable."

In developing a diversification strategy and choosing a new crop or livestock enterprise to add to an existing operation, Salassi offers some common sense guidelines:

- Select commodities that have different price patterns. Two crops may be no better than one if the prices for both plunge together because both are tied to the same basic market fundamentals. A good combination may require a study of past price trends to choose the crop or crop-livestock mix that offers the best chance of protecting farm income over time.

- To the extent possible, new enterprises should complement existing enterprises. For example, a new crop that can be produced with existing, easily borrowed, or inexpensively leased equipment may be a better alternative than a crop that requires expensive, specialized equipment. Similarly, resource use will be more efficient and conflicts can be avoided by choosing alternative commodities with labor requirements that are not concentrated in the same peak months of the year when current enterprises require the most attention.

- Before departing from the commodities already produced in your part of the country, evaluate the marketing outlets available and your own entrepreneurial skills. The financial position of a farm business probably won't be strengthened by adding an enterprise that requires special production and marketing practices about which the farm manager and workers have little or no knowledge.

REPORTS IN THE NEWS

State Ag Statistics

Agriculture plays an important but very different role in each of the 50 states.

A recent bulletin published by USDA's Economic Research Service provides a state-by-state statistical guide. It can be a handy reference tool if you're looking for information on a specific state's agriculture or making comparisons among states.

For each state, the report shows the number of farms, farmland acreage, the average age of farmers, major commodities produced, cash receipts and expenses, farm income, government payments to farmers, farm debts and assets, and a significant amount of related data.

The bulletin can provide answers to hundreds of questions, such as:

- Which state has the most farms, and which has the fewest?
- Which states have 90 percent or more of their land area defined as farmland?
- It's no surprise that Georgia is the top state in peanuts, Washington in apples, Florida in oranges, Texas in cattle, and Iowa in corn, hogs, and soybeans. But which state is the nation's largest producer of both broilers and rice (as measured by 1984 cash receipts)? Which state leads in both turkeys and tobacco? Which state in both barley and sunflowers? And which in cranberries?
- In which state is the average age of farmers the oldest? the youngest?

(Answers: Texas has the most farms and Alaska the fewest. In Nebraska, Iowa, and North and South Dakota, 90 percent or more of the land area is farmland. Arkansas is number one in broilers and rice, North Carolina in turkeys and tobacco, North Dakota in barley and sunflowers, and Massachusetts in cranberries. West Virginia's farmers are oldest, on average, and Alaska's are the youngest.

U.S.-State Agricultural Data *by Letricia Womack, Larry Traub, and Mary Rivers. (Published August 1986; 103 pages of state data; GPO Stock No. 001-019-00479-7; $4.75.)*

1985's Production Costs

The costs of producing crops and livestock declined last year, and capital replacement costs (investment in buildings and machinery) also fell below 1984's level.

However, earnings were down for most crop farmers as lower commodity prices more than offset the reduced costs. Growers of oats and barley saw their worst net returns in nearly a decade. Some livestock and milk producers registered modest gains, while others faced lower net returns.

This statistical report, part of an annual series tracking key economic indicators in farming, provides detailed estimates of cash expenses, cash receipts, capital replacement costs, and net returns for 1983-85.

It covers the following commodities: corn, sorghum, barley, oats, wheat (all major classes), rice, soybeans, sunflowers, peanuts, flax, cotton, sugar beets, sugarcane, fed cattle, cow-calf operations, feeder pigs, farrow-to-finish hogs, sheep, and milk.

Economic Indicators of the Farm Sector: Costs of Production, 1985 *prepared by Bob McElroy, Annette Clauson, and Jim Johnson. (Published August 1986; 153 pages, mostly data tables; GPO Stock No. 701-015-00007-0; $5.00.)*

Farm Machinery Figures

This bulletin presents data on U.S. machinery production, manufacturers' shipments, inventory measures, price indices, farm expenditures for purchases and repairs, and on-farm machinery inventories. Detailed tables also cover U.S. imports and exports by type of machinery and the annual value of trade to and from individual countries.

Selected Farm Machinery Statistics *by Michael Hanthorn and Carlos Sisco. (Published July 1986; 54 pages, mostly data tables; GPO Stock No. 001-019-00475-4; $2.75.)*

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Why Labor Gets More of the Food Dollar Than Farmers

Butchers, bakers, grocery clerks, waiters . . . in 1985, an estimated 34 cents of every dollar Americans spent on domestically produced farm foods went to compensate the millions of workers who process, handle, and distribute food after it leaves the farm. With an additional 41 cents going to pay other marketing costs, about 25 cents per dollar went back to farmers.

The cost of labor to transform farm commodities into consumer-ready foods is taking an increasing share of food expenditures, while the share going back to food producers is declining. The explanation, according to analysts, involves farm price trends, wage rates and employment in the food industries, and changing consumption habits.

Economist Denis Dunham of USDA's Economic Research Service reports that consumers spent around $344 billion last year for foods that originated on U.S. farms. His figures exclude purchases of imported foods, fish, and other items not produced on American farms.

Of the $344 billion, around $86 billion—25 percent—represented the farm value of the food purchased. A larger amount, $117 billion or 34 percent, went to pay the wages, salaries, tips, and benefits of workers in the food marketing system.

The remaining $140 billion—41 percent of total food expenditures—covered other marketing expenses, such as costs of packaging materials, transportation, fuel and electricity, advertising, property taxes, and insurance. This also included $17 billion in corporate profits (before taxes) to food processors, wholesalers, and retailers.

As a share of total consumer spending on domestic farm foods, these "other marketing expenses" have fluctuated in a fairly narrow range of 37-41 percent since 1975. Labor costs and farm value, however, have shown distinct trends in opposite directions.

Back in 1975, 33 percent of food expenditures went to farmers, and 29 percent paid the marketing sector's labor bill. By 1980, the shares were even at 31 percent each. In the next 5 years, the farm value share dropped another 6 percentage points, and the labor share gained 3 points.

Why Farm Value Fell Behind

In dollar terms, the amount of money going back to farmers from consumer food expenditures increased by almost $31 billion—55 percent—between 1975 and 1985. At the same time, though, total food spending more than doubled from $167 billion to $344 billion, and the labor bill escalated by 142 percent. The farm share simply didn't keep up.

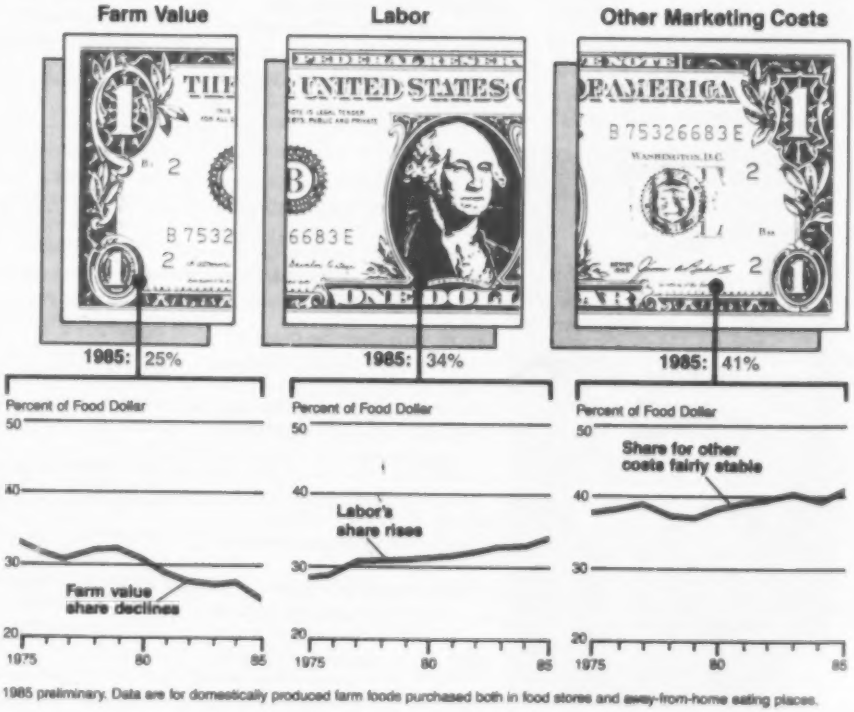
There are several reasons for the expansion in labor's share and the decline in the farm value share, according to Dunham.

Abundant supplies and steady-to-weak farm prices throughout much of this period held down increases in the food dollars going to farmers. In fact, from 1984 to 1985, the farm value actually dropped from $91 billion to $86 billion because of lower prices for farm products.

In contrast, wages and benefits for food industry employees rose steadily and fairly rapidly, particularly in the late 1970's and early 1980's. The higher labor costs usually were passed on to consumers, boosting the consumer food bill and gradually increasing labor's share of it.

The food industries also added significantly to their overall employment. Growth was concentrated primarily in food distribution, reflecting vigorous expansion in the fast food and restaurant sectors as well as the greater labor requirements of supermarkets. In response to changing lifestyles, tougher competition for the food dollar, and consumer demand for improved shopping convenience, many supermarkets have extended their hours, opened more check-

The Percentage of the Food Dollar Going Back to Farmers Declines, While a Growing Share Goes to Pay the Labor Bill for Processing, Handling, and Distributing Food



1985 preliminary. Data are for domestically produced farm foods purchased both in food stores and away-from-home eating places.

The more that food is transformed, prepared, or specially packaged after it leaves the farm, the greater the added costs, including labor costs, as the food moves through the marketing chain.

out counters, and added specialized sections, such as bakeries and delicatessens. All these services require extra employees.

In 1985, a total of around 11 million people were employed in food processing and distribution, compared with about 8 million in 1975, Dunham says.

Changing Consumption Habits

Employment growth and higher labor costs in the food industries have been encouraged by consumption trends that are changing the way the food dollar is divided.

Consumers are eating a larger percentage of their meals outside the home, and they are buying foods for the home that are quicker and easier to prepare. As the labor required to prepare foods is shifted from the consumer to someone in the food marketing system, more "value" is added to food between the farmer and the consumer.

Americans spent about 43 percent of their food dollars on away-from-home meals and snacks in 1985, compared with 36 percent just 10 years earlier. Because restaurant-goers are paying for the services of cooks, waiters, and dishwashers, the check is bigger and a smaller portion goes back to farmers compared with food purchased in supermarkets. As consumers devote an increasing percentage of their food budgets to away-from-home eating, the farm share of food spending declines, and the labor share tends to rise.

Another important reason why the farm share has dropped is strong consumer demand for heavily processed foods to match fast-paced, two-income, smaller family lifestyles. In general, the more that food is transformed, portioned, cooked, deboned, nutritionally supplemented, or specially packaged after it leaves the farm, the greater the added costs, including labor costs, as the food moves through the marketing chain. When those costs are passed on to consumers, the farm share of the total price goes down.

Does all this imply further shrinkage in the farm share over the years ahead? Dunham says it probably does, but he is quick to note that the decline may be much more gradual than it has been so far in the 1980's.

"Restrained wage and price inflation will moderate the cost of marketing foods after they leave the farm," he explains. "We also expect slower growth in food service sales as restaurants face tougher competition from supermarkets offering soup-and-salad bars, made-to-order sandwiches, and hot, ready-to-eat foods. Finally, production adjustments in agriculture are likely to reduce the surpluses that have depressed commodity prices."

According to Dunham, all these factors will temper further declines in the farm share over the next few years. "The farm share has dropped so rapidly in the recent past that it may even stabilize for a while," he says. □

[Based on information provided by economist Denis Dunham of the National Economics Division, Economic Research Service.]

Labor's Growing Share of Consumer Food Expenditures Partly Reflects Rising Earnings in Food Industries and Increasing Employment in Food Stores and Eating Places

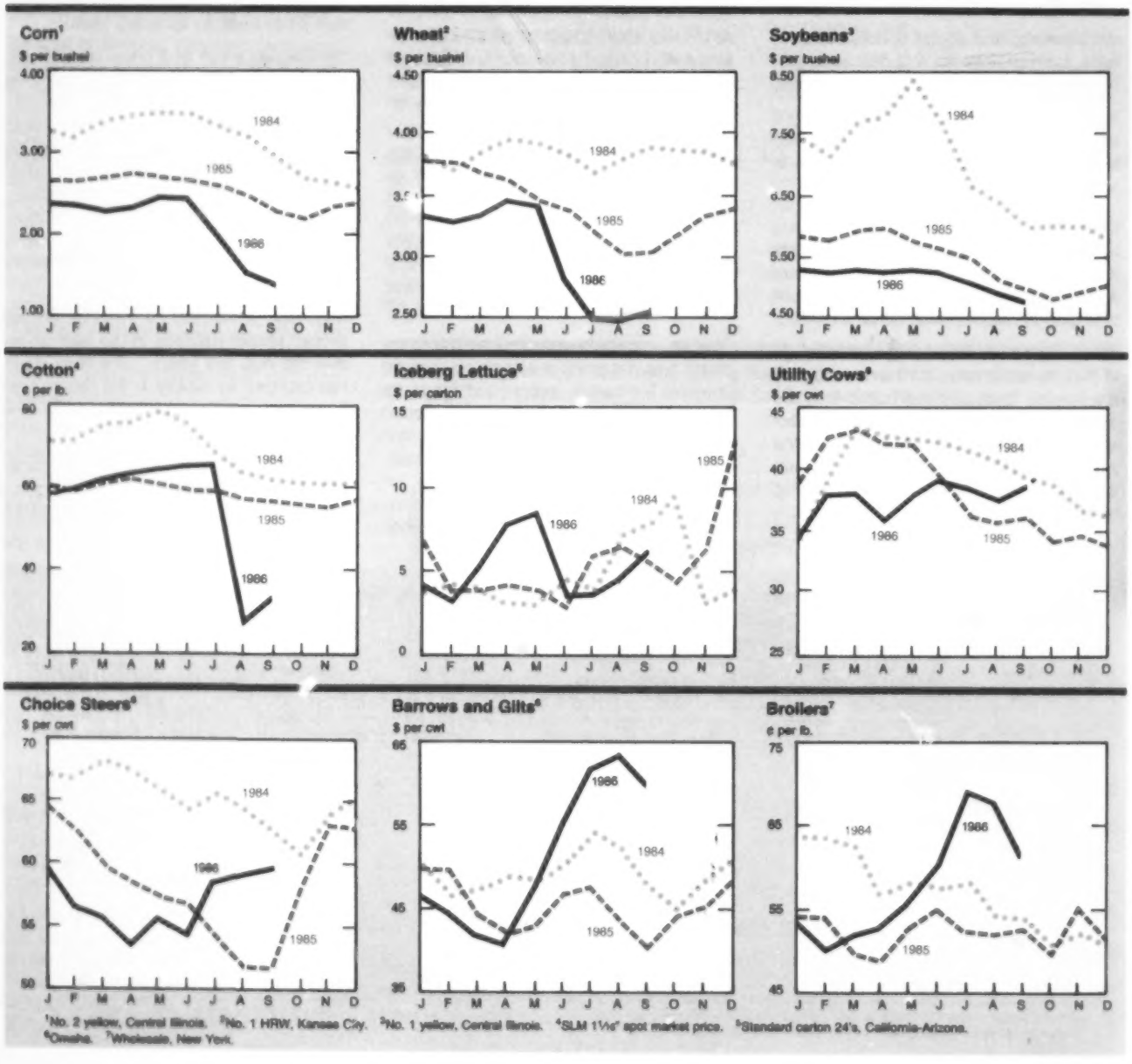
	Manufacturing of food and kindred products		Wholesale trade in groceries and related products		Food stores		Eating and drinking places	
	Average hourly earnings[1]	Employment, in thousands	Average hourly earnings[1]	Employment, in thousands	Average hourly earnings[1]	Employment, in thousands	Average hourly earnings[1]	Employment, in thousands
1975	$4.61	1,658	$4.59	587	$4.08	2,007	$2.55	3,380
1977	$5.37	1,711	$5.43	612	$4.77	2,106	$2.93	3,949
1979	$6.27	1,732	$6.39	648	$5.67	2,297	$3.45	4,513
1981	$7.44	1,671	$7.57	668	$6.85	2,448	$3.95	4,750
1983	$8.19	1,622	$8.70	685	$7.51	2,560	$4.27	5,007
1985	$8.54	1,636	$9.43	744	$7.36	2,827	$4.36	5,692

Source: *Employment and Earnings*, U.S. Department of Labor.
[1]Average earnings of production and nonsupervisory employees only.

FARMLINE TRENDS

Monthly Price Monitor

USDA's September index of farm prices declined 2.4% from August but was 1.7% above its year-earlier level. Corn slumped to $1.35 per bushel, almost $1 below its year-earlier price. Wheat, at $2.53, was up 5¢ from August but down more than 50¢ from a year earlier. Soybeans dropped 18¢ in September to $4.77. Cotton averaged 33.6¢ per lb., up nearly 7¢ from August but nowhere near prices of recent years. In the meat animals area, utility cows rose 90¢ to $38.52 per cwt, while choice steers increased slightly to $59.40. Although barrows and gilts dropped in price, September's $59.76 was $19 above the year-earlier level. Broilers, at a still-strong 61¢ a lb., were down about 7¢ from August. All prices shown are monthly averages.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1 1/16" spot market price. [5]Standard carton 24's, California-Arizona. [6]Omaha. [7]Wholesale, New York.

Costs of Production and Returns for 1985[1]

Costs of production for crops and livestock declined last year. Because of lower crop prices, however, net returns deteriorated for several commodities, including corn, sorghum, wheat, soybeans, and cotton. Net returns (cash receipts minus cash expenses and replacement costs[2]) dropped to a U.S. average of 18¢ a bushel for corn and 85¢ for soybeans. Wheat returns moved into the negative range, and sorghum returns remained negative. Net returns to fed cattle slipped from a U.S. average of −$2.62 per cwt in 1984 to −$5.26 in 1985. Cow-calf and farrow-to-finish hog returns remained negative—but not as deeply so as in either of the previous 2 years. Hogs offered a $4-per-cwt return above cash expenses, if replacement costs were ignored. Milk returns last year were positive and were up slightly from 1984.

	Corn (dollars per bushel)			Grain sorghum (dollars per bushel)			Wheat (dollars per bushel)		
	1983	1984	1985	1983	1984	1985	1983	1984	1985
Cash expenses	2.54	1.96	1.75	2.21	1.91	1.56	2.49	2.72	2.72
Cash expenses plus replacement costs[2]	2.97	2.28	2.04	2.79	2.41	1.97	3.06	3.34	3.33
Cash receipts minus cash expenses	.67	.62	.47	.63	.43	.34	1.11	.78	.34
Cash receipts minus cash expenses and replacement costs	.24	.30	.18	.06	−.06	−.07	.54	.17	−.28

	Soybeans (dollars per bushel)			Cotton (cents per pound)			Fed cattle (dollars per cwt)		
	1983	1984	1985	1983	1984	1985	1983	1984	1985
Cash expenses	4.39	4.16	3.30	63.8	56.0	51.8	67.43	66.50	63.76
Cash expenses plus replacement costs[2]	5.34	5.04	4.01	73.3	64.2	59.3	68.64	67.57	64.78
Cash receipts minus cash expenses	3.56	1.89	1.56	16.4	9.8	9.0	−5.31	−1.55	−4.24
Cash receipts minus cash expenses and replacement costs	2.61	1.02	.85	6.8	1.6	1.5	−6.52	−2.62	−5.26

	Cow-calf (dollars per cow)			Hogs, farrow to finish (dollars per cwt)			Dairy (dollars per cwt of milk)		
	1983	1984	1985	1983	1984	1985	1983	1984	1985
Cash expenses	268.80	276.53	266.87	46.42	46.93	40.22	10.39	10.64	9.74
Cash expenses plus replacement costs[2]	333.08	340.99	330.47	52.61	52.61	45.83	11.97	12.20	11.20
Cash receipts minus cash expenses	−21.62	−17.75	−12.48	.50	1.21	4.00	4.20	3.81	3.90
Cash receipts minus cash expenses and replacement costs	−85.90	−82.21	−76.08	−5.69	−4.47	−1.61	2.62	2.25	2.44

[1]All figures are U.S. averages. [2]Replacement costs are estimated charges to allow for replacement of capital invested in buildings and machinery.

Data were provided by economist Bob McElroy based on the latest costs of production report just published by the Economic Research Service. For information on ordering the complete report, see this month's *Reports in the News* section.

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What Happens When the Well Runs Dry?

Tight Times for Small Towns
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PERSPECTIVES

"MUTED OPTIMISM" SETS THE TONE FOR THE EXPORT OUTLOOK over the year ahead. Muted, for two reasons: the uncertain policy and trade environment, and recent world supply-demand developments that forced analysts to temper some of their earlier expectations for stronger volume increases. Yet, behind the caution, there's optimism, too, because fiscal 1987 (which began October 1) will almost certainly be a better year for U.S. agricultural exports than the one that just ended.

Lower average prices for major export commodities, such as wheat, corn, soybeans, and cotton, may keep our total export earnings from rising above fiscal 1986's $26.3 billion.

But competitive pricing has already yielded positive results for sales volume, according to ERS trade analyst Steve MacDonald. "Fiscal 1986 ended with 4 straight months of rising export volume," he reports, "as lower prices demonstrated their ability to boost sales." The impact will continue in the year ahead, he says, as "the lower prices enable the United States to capture an increased share of the world market for the first time since 1980." If he's right, it could be a sign that the long-awaited turnaround in exports is finally, albeit slowly, getting underway.

Higher export volumes are anticipated for U.S. feed grains, wheat and soybeans. Cotton volume should more than double from fiscal 1986's depressed level. The greater sales volumes will help offset the lower prices, says MacDonald. Current projections suggest that total tonnage of U.S. agricultural exports may rise about 6% in fiscal 1987—a significant shift given that tonnage has dropped steadily for the last 6 years in a row.

No one wants a repeat of fiscal 1986, when exports suffered from both lower prices and lower volumes. Volume fell to 110 million metric tons, the lowest since 1975. That was down from a high of 163.9 million tons back in fiscal 1980, and the declines were accelerating. In the last year alone (fiscal 1985 to 1986), export volume dropped 10% for U.S. wheat (unmilled), 34% for feed grains, and 62% for cotton. Soybeans did well though, with volume climbing 21%. Because lower volumes for most major commodities were compounded by lower prices, export value declines were especially sharp. "From 1984 to 1986," MacDonald notes, "we recorded the largest 2-year percentage drop in U.S. agricultural export earnings since the early 1940's."

Global export opportunities will probably expand slightly in the year ahead, but don't expect the competition to ease off, MacDonald cautions. "China, the world's largest grain producer, will be a net grain exporter for the second straight year. Recent projections also indicate that this year's Soviet grain crop will be the largest since 1978. That could mean another year of lower Soviet imports. Last year, for the first time since 1972, the USSR purchased less than 1 million tons of U.S. wheat." Looking at other commodities, MacDonald foresees "a probable rebound in foreign soybean production, which will trim prospects for our best performing farm export product of 1986."

The U.S. agricultural trade balance may stabilize in the year ahead, after dropping fairly steadily for the last 5 years. In fiscal 1986—for the 27th consecutive year—the U.S. recorded a surplus in exports over imports, but the margin was narrow. At $5.4 billion, the surplus was the smallest since 1972, reflecting both a sharp decline in export value and a record $20.9 billion in agricultural imports. The U.S. farm trade surplus peaked in fiscal 1981 at $26.6 billion.

Special note to readers: The 1986 Yearbook of Agriculture, *Research for Tomorrow,* is now available. In its 336 pages, it offers nearly two dozen articles on biotechnology in agriculture, as well as major sections on insects and weeds, human nutrition and food, forest resources, and careers in agriculture. Copies are available for $9.50 each from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Ask for the book by title and stock number 001-000-04472-9.

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AGRICULTURE . . . NATURAL RESOURCES . . . RURAL DEVELOPMENT
Practical economic intelligence from USDA's Economic Research Service

FEATURES

Groundwater Irrigation: Where the Profits Are Drying Up *by Doug Martinez* 4

What happens when turning on the irrigation pump no longer helps farmers turn a profit? The Texas High Plains was the first major section of the nation to face this question, but aquifer levels are dropping rapidly and pumps are probing ever-deeper in 11 states beneath 14 million acres of farmland irrigated with groundwater.

Tight Times for Rural Governments *by Mark Brohan* 8

Many rural governments, particularly those in agricultural areas, are caught in a vise of rising costs and falling revenues. Declining farmland values and the ripple effects of a weak farm economy have whittled down their tax revenues, while rising unemployment and business failures on Main Street have increased the demand for public services.

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Groundwater Irrigation: Where the Profits Are Drying Up

About 33 percent of total U.S. harvested acreage of grapes is in fast-depleting groundwater areas.

What happens when turning on the pump for irrigation water no longer helps farmers turn a profit?

Faced with declining water levels and well yields, farmers in the Texas High Plains were among the first to ask themselves that question. Since the mid-1970's, producers there have halted groundwater irrigation on about 2 million acres, largely because of the "economic exhaustion" of the underground water reserves, or aquifers, they were "mining."

But the same question may soon be asked by other farmers—mostly in the Far West and Midwest—who are also encountering diminishing levels of groundwater stored in aquifers, and the greater costs of going deeper into the earth to draw it out.

"Aquifer levels have been dropping substantially in 11 states beneath 14 million acres of land irrigated from groundwater," says economist Gordon Sloggett, formerly of USDA's Economic Research Service. In these states—which account for 85 percent of the total U.S. acreage irrigated from aquifers—groundwater levels are falling from a half-foot to more than 5 feet each year.

By citing these figures, Sloggett and fellow researcher, ERS economist Clifford Dickason, aren't suggesting any serious danger to the state of food and fiber production in the United States.

"Groundwater levels do not seem to pose a significant national threat to irrigated agriculture in the foreseeable future," Sloggett says. "Still, major changes may be likely for the areas dependent on irrigation from underground aquifers, and some areas will be affected sooner and more extensively than others."

When Pumping No Longer Pays

Areas showing rapid rates of decline in groundwater levels and deep pumping depths are likely candidates for widespread change, Sloggett says.

"Pumping depths of more than 200 feet and sharply falling aquifer levels (more than 3 feet per year) are common in parts of Arizona, California, Idaho, Kansas, Texas, and the Oklahoma Panhandle." Other states with areas which may experience severe strains on groundwater resources further into the future are Arkansas, Colorado, Florida, Nebraska, and New Mexico.

Along with increased pumping costs and declining well yields, Sloggett says, farmers drawing water from progressively deeper wells find their pumping efficiency is decreasing. "In a problem area, the combination of these factors eventually will economically exhaust the groundwater resource. In other words, it will cost so much to bring the water up and put it on the crops that groundwater irrigation will no longer pay."

The Texas High Plains was the first major section of the country to feel these effects.

"Farmers in Texas began extensive use of groundwater for irrigation earlier than other Plains states," says Sloggett.

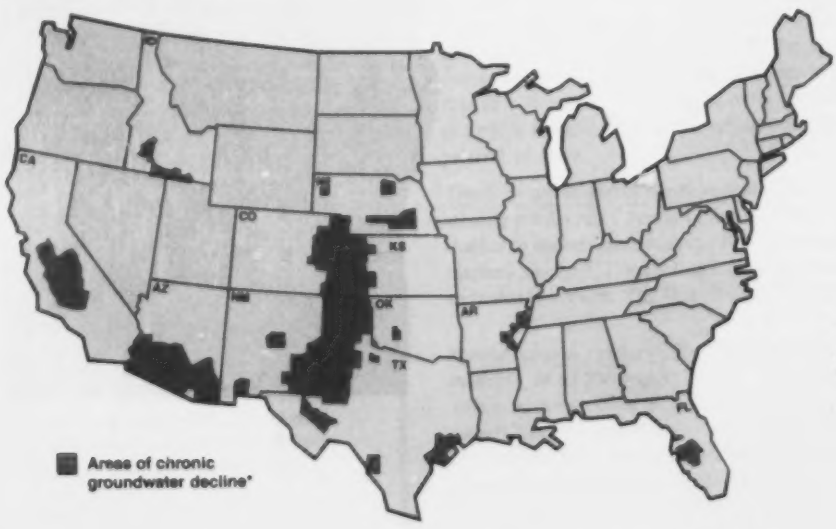
Moreover, "Texas relies more than any other state on natural gas for pumping, and the price of natural gas has risen much faster since the early 1970's than that for other types of energy."

The rate of groundwater decline in Texas now ranges from 1 to 4 feet per year. Instead of accelerating, though, this depletion trend shows signs of slowing. The average annual rate of decline has been reduced by about half a foot since the 1950's in the southern Texas High Plains, and by about three-quarters of a foot in the northern Texas High Plains.

Several factors have contributed to the slowdown.

"Well yields have dropped along with falling water levels, reducing the amount of water that may be pumped in a given period. Farmers have also become more efficient irrigators by adopting better irrigation techniques with existing technology and by shifting to more advanced technology, thereby cutting water application rates. Crops with lower water requirements are being substituted for crops with higher

The Major Areas of Groundwater Decline Are Concentrated in the Irrigation-Dependent Southwest



* Determinations were made by U.S. Geological Survey. Each of these 11 states has more than 500,000 acres in groundwater irrigation. Taken together, they account for 85 percent of the total U.S. area irrigated with groundwater.

Faced with declining water levels and well yields in large parts of the Southwest, many farmers have become more efficient irrigators.

water needs. And the amount of irrigated land has declined by about 15 percent in the last few years because of economic exhaustion of the aquifer in parts of the Texas High Plains," Sloggett says.

This pattern of slower groundwater declines may hold true in other affected areas as well.

"Although we don't have sufficient long-term data on annual water levels in most other groundwater mining areas," he says, "the rate of decline will likely slow in some of those areas because they share many of the conditions found in the Texas High Plains."

What Happens to Production?

In addition to identifying specific geographic areas where groundwater is being depleted in substantial quantities, the two researchers have also pinpointed the particular crops that may be affected.

"The impact on some crops would be more significant than on others," says economist Dickason.

Currently, the leading crops harvested in areas where groundwater levels are falling sharply are grapes, cotton, grain sorghum, citrus fruit, and rice. For grapes, 33 percent of total U.S. harvested acreage is in fast-depleting groundwater areas, for cotton 22 percent, for grain sorghum 16 percent, for citrus 15 percent, and for rice 13 percent.

Dickason says the effects on U.S. production of any of these crops would depend on available alternatives if farmers are eventually forced to discontinue irrigation from underground aquifers. These alternatives include growing the same crops under dryland conditions, switching to another crop that can be grown with available natural moisture, going out of crop production, or, in rare cases, irrigating from surface water sources such as rivers and reservoirs.

"These decisions and their timing depend on the profitability of irrigation and the groundwater characteristics peculiar to the respective areas," he says.

The other major option that farmers have at hand to cope with falling aquifer levels involves improved irrigation efficiency through better techniques and technologies.

The "Ultimate" System

"Efficiency relates to the amount of water that must be applied to the field to satisfy the water requirements of crops," Sloggett says. "Application efficiency of irrigation systems can range from 40 percent to more than 90 percent. If the 'ultimate' system were available, an irrigator would have to pump and apply only 1 acre-inch of water for every acre-inch needed to supply the crop requirement."

Of course, evaporation, runoff, seepage, and percolation of irrigation water below a crop's root zone all work against achieving the "ultimate" system. Nevertheless, small differences in irrigation efficiency levels can involve huge quantities of water—especially on farms with thousands of irrigated acres.

For an irrigation system that is 75 percent

(continued on next page)

Deep Wells and Sharply Declining Water Levels Are Common in the 11 States with Large Areas of Groundwater Irrigation

	Pumping depths[1]	Annual rates of decline[1]
	Feet	
Arizona	75-535	2.0-3.0
Arkansas	50-120	0.5-1.3
California	100-260	0.5-3.5
Colorado	175-275	2.0
Florida	250	2.5
Idaho	200-375	1.1-5.0
Kansas	190-275	1.0-4.0
Nebraska	25-250	0.5-2.0
New Mexico	100-200	1.0-2.5
Oklahoma	100-275	1.0-2.5
Texas	50-300	1.0-4.0

[1]These figures show the range of *average* pumping depths and rates of decline in different parts of each state. The overall state average and the unaveraged lows and highs may be outside the indicated ranges.

How Crop Production Might Adjust When It No Longer Pays to Pump

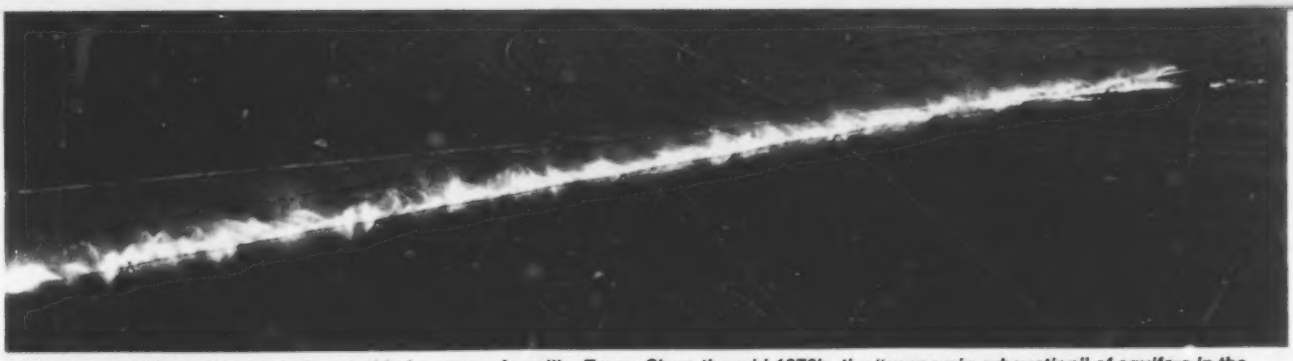
What's ahead for the areas most affected by chronic, but not yet crippling, groundwater declines?

ERS economist Clifford Dickason offers the following capsule comments:

- Dryland grain sorghum is a practical alternative to irrigated cotton in much of Texas. Irrigated wheat would probably go to dryland wheat, except in Arizona and California. Nearly all the corn and alfalfa grown in groundwater irrigated states other than Nebraska could not be grown without irrigation because rainfall is not sufficient for dryland production. Dryland corn is a feasible alternative to irrigated corn in much of Nebraska.

- Much of the acreage devoted to irrigated corn and alfalfa in Colorado, Kansas, New Mexico, Oklahoma, and Texas would probably be used for the dryland production of grain sorghum or wheat. Almost no crops can be produced without irrigation in the desert areas of Arizona, California, and New Mexico. Rice in Arkansas and Texas, citrus in Florida, and grapes in California could not be grown profitably in their present locations without irrigation.

- Crop production will adjust gradually to declining groundwater levels. Adequate time exists to relocate the production of affected crops to areas that will support their production. For example, areas in California with adequate water supplies and climate could pick up any lost grape and citrus production. Rice production in Arkansas and Texas might transfer to other parts of those states or to other rice-producing states. Grain crop production could be transferred to other grain-producing states.



A circular sprinkler system operates on this farm near Amarillo, Texas. Since the mid-1970's, the "economic exhaustion" of aquifers in the Texas High Plains has forced farmers to halt irrigation on 2 million acres.

efficient, 1.33 acre-inches of water have to be pumped and distributed to meet a 1-acre-inch crop requirement. If an irrigator uses a 40-percent efficient system, 2.5 acre-inches of water would have to be drawn and distributed to meet a requirement of 1 acre-inch. (Irrigation water requirements range from 12 to 60 acre-inches per year, depending on crop and geographic area.)

"All farm operators would presumably choose the most efficient system," Sloggett says. "But what is most economically efficient for one irrigator may not be so for another." That's because the physical properties of the land irrigated and equipment costs may prompt farmers to make different choices.

"For example, in some locales, irrigators who can pump and distribute irrigation water cheaply with an unimproved gravity system may use this physically inefficient system at lower total cost than a more efficient system," says Sloggett.

However, gravity irrigation systems require land with enough water-holding properties to allow water applied at one end of the field to flow to the other end without too much water percolating below a crop's root zone. Thus, irrigators with very porous, sandy soils cannot use gravity systems and must use high-cost sprinklers.

The Affordability Factor

"Capital costs may also dictate the choice of irrigation system," says Sloggett. Sprinkler or improved gravity systems generally require much larger investments than an unimproved gravity system.

"But as water levels and well yields decline, irrigation water costs are rising, making the more technically efficient sprinkler systems increasingly appealing to the irrigator," he says. Improved efficiency can mean—and make—the difference between continuing with groundwater irrigation or halting it completely.

"Although farmers need not be confronted by declining water levels to consider adopting more efficient irrigation systems, they have more incentive to do so if their irrigation water costs are increasing faster than those of other irrigators."

Even so, efficiency can prolong the productive capacity of aquifers for just so much longer—and only if farmers do not use the "extra" water they've saved simply to expand acreage, which is sometimes done.

"As well yields gradually decline," Sloggett says, "irrigation in more areas will begin to fall off as well." □

[Based primarily on information provided by former ERS economist Gordon Sloggett, now with Oklahoma State University, and economist Clifford Dickason of the Natural Resource Economics Division, Economic Research Service.]

What the States Are Doing About It

For 50 years, lakes of water have been lifted from underground reservoirs to irrigate farmland.

High-volume turbine pumps developed half a century ago made this possible—and also made possible, and profitable, the production of crops in desert areas of Arizona, California, and New Mexico. In other states and places, intensive irrigation has extended agricultural acreage and boosted yields.

But it has also depleted groundwater reserves, which have been accumulating over millions of years to become the sometimes enormous, earth-bound quantities of water they are today.

More rapidly than it can be replaced in many areas, groundwater held in aquifers is being removed.

Buried beneath the earth's surface, aquifers don't readily receive the melting snow and rainfall that annually replenish lakes, rivers, streams, and above-ground reservoirs. Melting snow and rainfall may eventually reach aquifers, but much more slowly.

Some states are trying to reduce the demand on aquifers. California, for example, is currently transferring surface water directly into areas with declining water levels. And the Central Arizona Project, once completed, will shift surface water to parts of that state where water levels are fast falling.

Obviously, such efforts may help extend the life of aquifers—and their agricultural use—in these areas. In similarly affected areas which cannot (or choose not to) build surface-water transfer projects, other alternatives must be sought to deal with problems created by reduced groundwater supplies.

Several states, at least, are limiting both the amount of water that may be pumped for irrigation, and the wells that may be drilled. Of the 11 states with major areas of groundwater decline, nine (Arkansas and California are the two exceptions) have placed restrictions on groundwater irrigation use.

Arizona has enacted the toughest laws, requiring gradual reductions in the use of groundwater for irrigation. Such reductions are to be accomplished by mandatory water conservation or by the removal of land from irrigated crop production.

It's obvious that agriculture does not always speak with a single voice in regard to groundwater protection laws. Conservation measures hurt in the short run, but they may help prolong the viability of irrigation agriculture in many of the areas where groundwater is now being depleted.

Downstream Benefits of Curbing Erosion

When soil from a farm is eroding into rivers, streams, and reservoirs, the farmer isn't the only one who suffers the loss.

The plants, animals, businesses, and people downstream may also pay a heavy price, according to agricultural economist Marc Ribaudo of USDA's Economic Research Service.

Soil erosion on farms can put sediment, fertilizers, and pesticides into waterways. These "pollutants," says Ribaudo, cause a number of problems. They can silt up reservoirs, block navigation channels, add to flood risks, threaten aquatic plants and animals, reduce the commercial fish catch, damage recreational swimming, boating, and fishing areas, and raise the costs of municipal water treatment.

Ribaudo contends that agriculture is responsible for a large portion of the more than $7 billion in "offsite" damage caused by soil eroding into U.S. waterways. And if the costs of erosion reach beyond the farmgate, he reasons, the benefits of conservation have a wider impact, too.

Small reductions in overall erosion could generate sizable benefits—especially when the productivity gains from less erosion on the farm are added to the offsite advantages of less sediment and fewer pollutants entering waterways.

Soil conservation efforts made in 1983 generated around $340 million in offsite benefits alone, based on the estimating procedures used by Ribaudo.

Reducing Soil Erosion *by Marc O. Ribaudo. (Published September 1986; 24 pages; GPO Stock No. 001-019-00468-1; $1.75.)*

A Small Market with Growth Potential

The Ivory Coast in tropical West Africa is no bigger than New Mexico. Its population barely exceeds 10 million. As a market for American agricultural products, it is very small. Its purchases peaked at about $20 million in 1978—less than one-tenth of 1 percent of the total value of U.S. farm exports.

There is another perspective, however, suggesting that the Ivory Coast may be one of many small nations that deserve the attention of American traders surveying future opportunities for agricultural exports.

The former French colony, for example, has one of the highest rates of real economic growth on the African continent. Although it carriers a large foreign debt, it is the world's largest producer and exporter of cocoa, and the third largest of coffee. Rising incomes, a rapidly growing population, continuing migration from rural to urban areas, and the demand for more variety in the diet will generate greater demand for agricultural imports in years ahead.

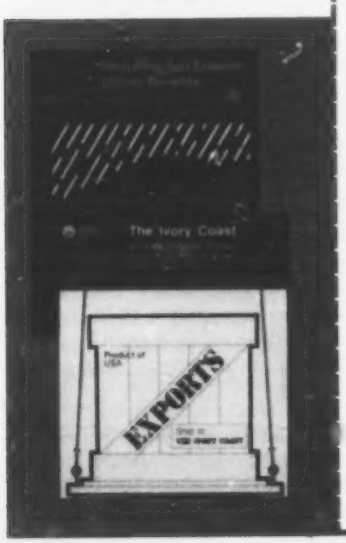
France remains the major supplier, and, so far, the United States has been a marginal player. The U.S. share has ranged from 2 to 7 percent of the Ivory Coast's total agricultural imports—figures that leave a lot of room for improvement.

Economists Michael Trueblood and Nadine Horenstein predict that import growth over the next several years will be led by rice and wheat. France has a lock on wheat, they say, but the U.S. market share for rice could improve with the decline in the value of the dollar and the new lower U.S. rice prices.

With competitive pricing, some U.S. beef and high-quality tobacco would also sell. In processed foods, the United States has not fared well partly because Ivory Coast consumers prefer product labels in their official language—French—and are accustomed to metric weights and container sizes. French labeling and metric packaging could lead to some U.S. sales of preserved milk and vegetables.

In time, there may also be a need to import premixed grains for the country's growing poultry industry—another possible opening for U.S. exporters.

The Ivory Coast: An Export Market Profile *by Michael Trueblood and Nadine Horenstein. (Published September 1986; 32 pages; GPO Stock No. 001-019-00471-1; $2.25.)*



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Tight Times for Rural Governments

Good roads, a school system, and adequate police and fire protection are among the basic services taxpayers have come to expect from their local government. If a pothole needs patching or a street sign needs fixing, they depend on city hall to take care of the problem.

But in some parts of the country—namely in the rural areas where agriculture makes up a large portion of the economic base—local governments are having a much tougher time funding these services.

Declining farmland values and the ripple effects of a weak farm economy have whittled down the tax revenues of many western and midwestern communities, according to Tom Stinson, until recently an economist with USDA's Economic Research Service and now an economics professor at the University of Minnesota. At the same time, Stinson adds, rising farm sector unemployment has increased the demand for public services in such areas as education, job retraining and placement, and mental health counseling.

The analyst suggests that many governmental units, primarily county governments and school boards, are being caught in a financial vise of rising costs and falling revenues. The elimination of the federal revenue sharing program—until recently a key source of money for some counties, cities, and townships—and possible cuts in state aid add to their concerns.

As a result, Stinson says, many rural governments face the possibility of substantial belt-tightening for the rest of the 1980's, and possibly beyond.

Declining farmland values account for much of the reduction in tax revenues. The value of an average acre of U.S. farmland has fallen from a peak of $823 in 1982 to $586 early this year.

In much of the United States, property taxes account for about 27 percent of local tax revenues, but this figure can average 50 to 70 percent in some parts of the West and Midwest.

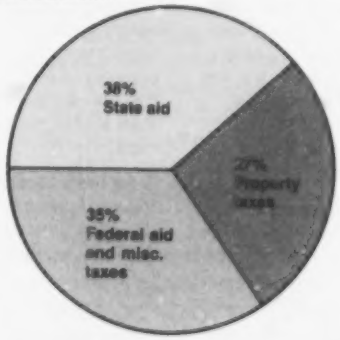
Some Findings

Stinson analyzed tax bases in agriculture-dependent rural counties of Arkansas, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, and North Dakota. Among his findings:

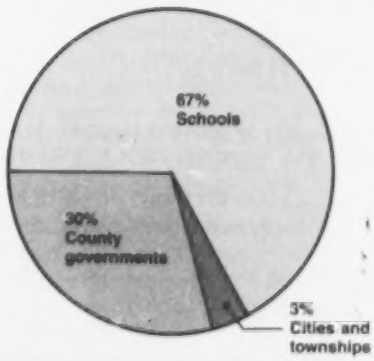
Many rural governments and school systems are caught in a financial vise of rising costs and falling revenues.

- Tax delinquency rates have increased substantially. The dollar value of overdue taxes more than doubled in parts of Iowa and Minnesota between 1980 and 1985. In some Nebraska counties, delinquencies rose 70 percent in the same period.

Sources of Revenue for All Rural Communities*



How Farm Property Taxes Are Spent in Some Select Communities▲



* Source: U.S. Department of Commerce, 1982 Census of Governments.

▲ Percentage figures are based on tax base analysis for select counties and crop reporting districts in Arkansas, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, and North Dakota.

- Based on 1982 levels of local government spending, declines in agricultural property values over the last few years could have produced a combination of tax increases and expenditure cuts in some areas that range from $13 to $199 per person.

"The decline in farmland values has been well documented for several years, but it's only now that rural cities and counties are realizing they have a problem," Stinson says. "That's because assessed land values in some areas are only adjusted periodically."

Alternative Sources Strained

Falling property tax revenues alone probably wouldn't put many rural communities on the edge of financial hardship, Stinson says. When reduced tax revenues coincide with cuts in income from other sources, however, local governments may be forced to trim budgets and raise tax rates—a situation currently facing some school boards, townships, and county governments in Arkansas, Minnesota, and Nebraska.

Although figures vary from state to state, rural communities presently count on state aid for an average of about 38 percent of their revenue base. Federal aid, miscellaneous taxes, and user fees make up about 35 percent, and property taxes the remaining 27 percent.

In the past, many fiscally strapped local governments looked to the state or federal government for help. But many states are also experiencing budget woes. Stinson notes that in six of the eight states he studied, budget officials announced midyear service reductions because of less-than-expected revenues.

On the national level, aid cutbacks have also been underway. According to the economist, federal aid to state and local governments—when measured in 1972 constant dollars—has declined by about 17 percent, from $218 billion in 1980 to about $180 billion in 1985.

The major source of federal aid was the revenue sharing program. Since the program began in 1973, about $85 billion has been pumped into state, county, and city budgets. Many cities and counties used the

School systems are often hit particularly hard by the decline in property tax revenue in rural areas where agricultural land values have plummeted.

money as a "rainy day" source of income for budget balancing and unexpected expenses.

But federal budget concerns resulted in the program's elimination. Stinson notes that as federal lawmakers strive to meet deficit reduction targets established by the Gramm-Rudman-Hollings Act, any increase in federal aid for existing programs is unlikely.

Balancing Act

The economist predicts that county governments and school systems will be most directly affected by aid cutbacks and tax declines. In the areas Stinson studied, about 67 percent of farm-generated property taxes went to fund the local school system, another 30 percent went to the county government, and the remaining 3 percent to townships for services such as highway repair and police and fire protection.

According to Stinson, agricultural communities will also be hard pressed to keep up with an increased demand for social services caused by the weak farm sector.

Moreover, when farm incomes fall, Main Street businesses suffer too. Local unemployment increases, and that hurts commerce. Until the overall farm economy improves, he notes, small-town officials will have to pinch pennies and search for alternative forms of revenue, wherever possible.

Stinson says that communities in grain-producing states like Iowa, Kansas, Nebraska, North Dakota, Minnesota, and Arkansas will face the biggest challenge to keep municipal services intact. Local governments dependent on farm-generated property taxes in other states may have less of a problem because of their more diversified economies.

"Still, for many communities where agriculture is the main source of income, even modest percentage reductions in agricultural property values can have major impacts on local governments," Stinson says. "The downturn in agricultural property values and the accompanying decrease in local tax bases have the potential to permanently change the quality of life in many parts of rural America if left unchecked." □

[*Based largely on information supplied by Tom Stinson, formerly an economist with the Agriculture and Rural Economics Division, Economic Research Service, and now a professor in the Agriculture and Applied Economics Department at the University of Minnesota, St. Paul.*]

Holding Their Own in Fulda, Minn.

How are farm communities coping with declines in local government revenues?

For some insight, economist Tom Stinson looked at the tax base of Fulda, Minnesota, a town of about 1,300 people located in the southwestern part of the state.

"In Fulda, agricultural problems have affected local business sales, employment, real estate values, property tax rates, and demands for service," Stinson says. "Since 1979, surrounding farmland values have declined by 50 percent, and property tax delinquencies have skyrocketed."

In 1985, a large increase in local government expenses required an 8-percent increase in local taxes, says the analyst. An additional 2-percent increase could be a possibility in late 1986 or early 1987.

Retail sales declined by 55 percent from 1979 to 1984, falling from $7.5 million to $3.4 million. Since 1985, five businesses and a bank have closed, eliminating 21 jobs.

"We've been hard hit, but the town's not broke, and we're holding our own," says Fulda Mayor Mary Magnus. "We've had to reduce our spending on some programs, but so far volunteer efforts have made the effects minimal."

According to Stinson, many rural communities are now using better accounting and money management practices in an effort to stretch budget dollars.

In Fulda, notes Magnus, the town's annual budget has avoided large deficits in recent years because of an increase in utility fees, public employee wage reductions, and the establishment in 1984 of a contingency fund for emergency situations.

Still, the town got some bad news recently when it learned that assessed land values inside the city limits could decrease by about 11 percent for the 1986-87 fiscal year.

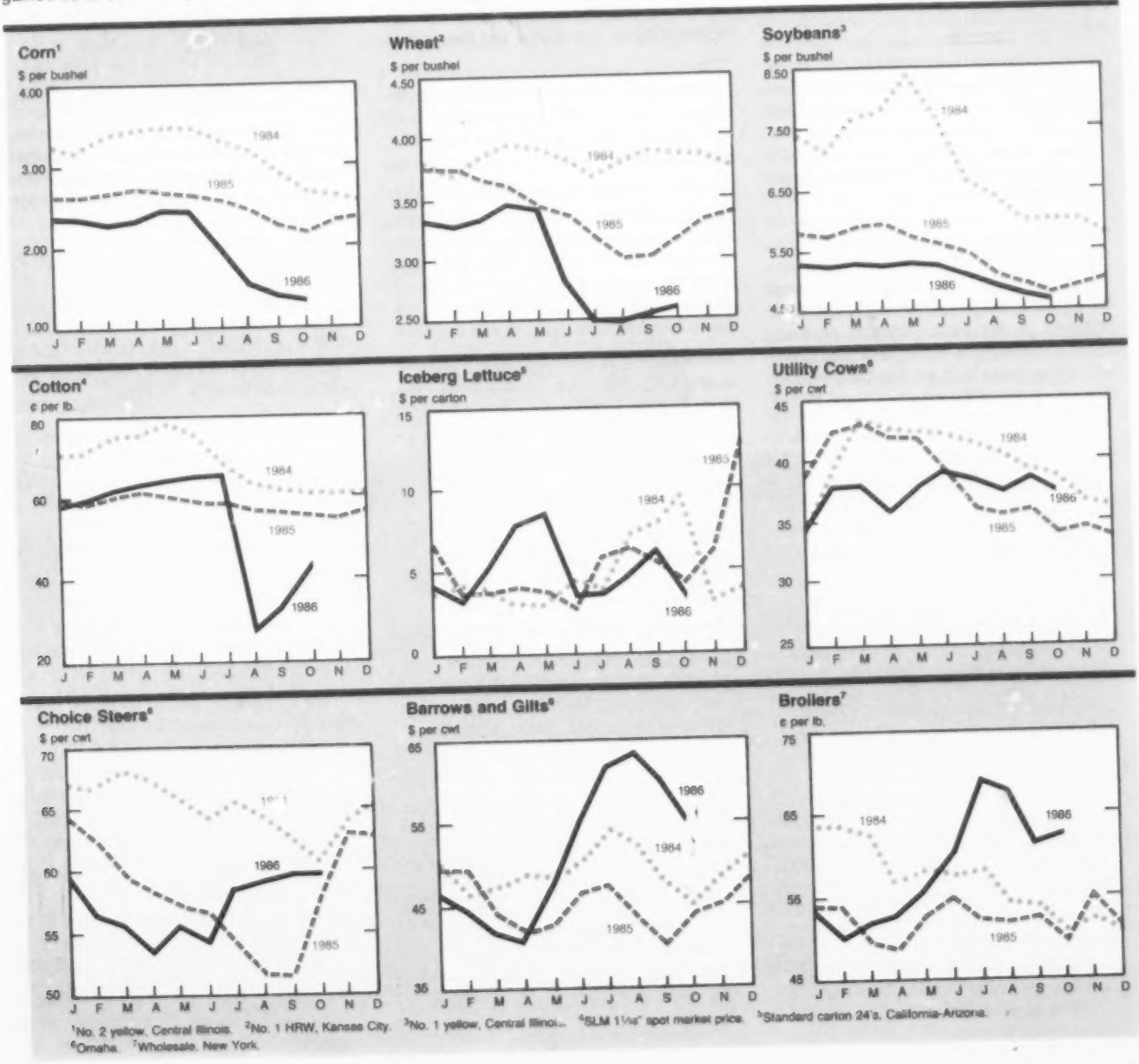
But the mayor and the four-member city council have formed two ad hoc committees charged with heading off potential budget problems. Plans are also in the works to foster tourism by securing a state grant. The goal: renovate one of the town's older homes into a bed-and-breakfast establishment.

"We're still a farm-dependent community, and cutbacks in federal and state aid have hurt us," Magnus says. "But our sense of community has deepened. We plan on getting through this crisis together."

FARMLINE TRENDS

Monthly Price Monitor

USDA's October index of farm prices declined 0.8% from September and was 1.6% below its year-earlier level. Corn, at $1.33, lost 2¢ per bushel, while wheat gained 8¢ to $2.61. Soybeans dropped 10¢ in October to $4.67. Cotton rose 10¢ to 43.9¢ per lb. Lettuce prices, at $3.44 per carton, were the lowest since June 1985. In the meat animals area, utility cow prices dropped to $37.37 per cwt, while choice steers continued to inch up toward $60. Barrows and gilts slipped to $55.15, still more than $10 above their year-earlier level but down sharply from their August 1986 peak of $63.68. After declining for 2 straight months, broilers rallied slightly to 62.5¢ a lb., up 12¢ from a year earlier. All prices shown are monthly averages.

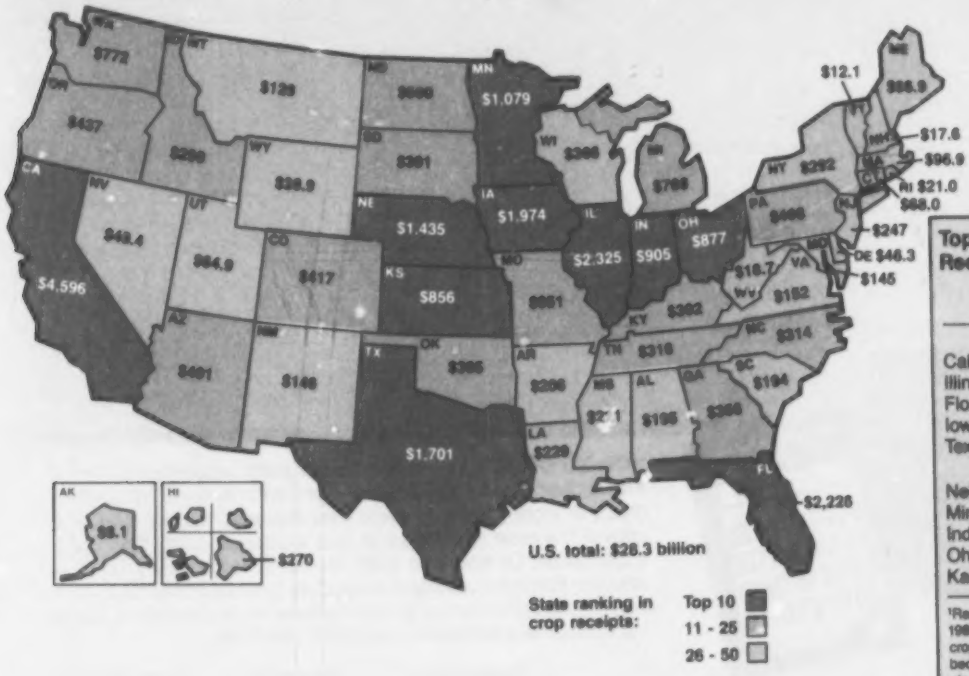


[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinoi... [4]SLM 1 1/16" spot market price. [5]Standard carton 24's, California-Arizona. [6]Omaha. [7]Wholesale, New York.

Keeping Track of Cash Receipts

Cash Receipts for Crops, January-July 1986

All figures in millions (000,000)



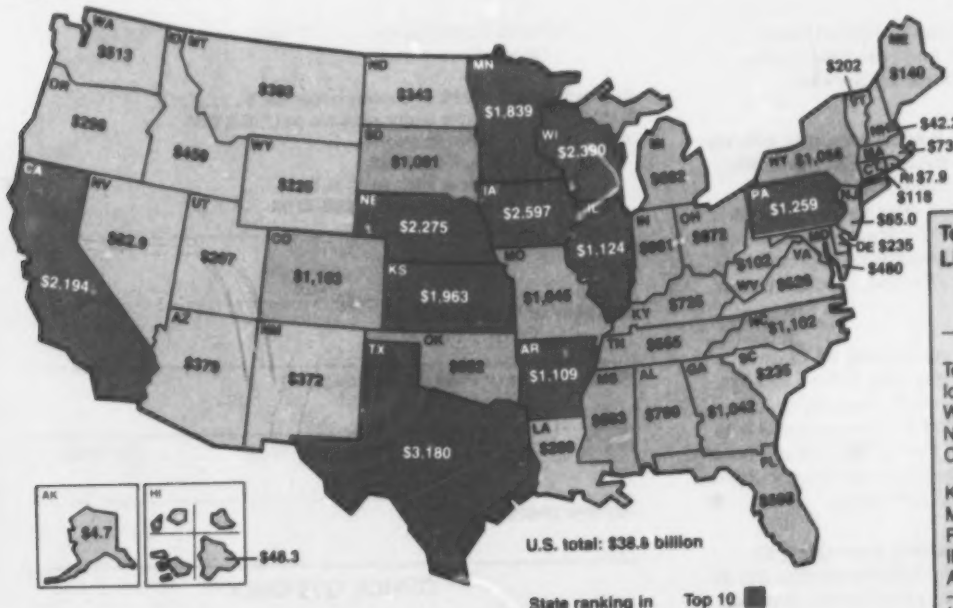
Top Ten States in Jan.-July Crop Receipts[1]

	Jan.-Dec.		Jan.-July
	1984	1985	1986
		$millions	
California	9,944	9,805	4,596
Illinois	4,482	5,704	2,325
Florida	3,642	3,726	2,226
Iowa	3,924	4,390	1,974
Texas	3,569	3,857	1,701
Nebraska	2,510	3,093	1,435
Minnesota	2,728	3,102	1,079
Indiana	2,426	2,869	905
Ohio	1,989	2,430	877
Kansas	2,406	2,478	856

[1]Rankings are based on marketings for January-July 1986, which excludes peak marketing periods for some crops and some states. As data for August-December become available, 1986 rankings may shift to more closely match full-year rankings for 1984 and 1985.

Cash Receipts for Livestock and Poultry, January-July 1986

All figures in millions (000,000)



Top Ten States in Jan.-July Livestock and Poultry Receipts[1]

	Jan.-Dec.		Jan.-July
	1984	1985	1986
		$millions	
Texas	5,901	5,441	3,180
Iowa	5,015	4,811	2,597
Wisconsin	4,075	4,100	2,390
Nebraska	4,524	4,113	2,275
California	4,529	4,165	2,194
Kansas	3,614	3,264	1,963
Minnesota	3,360	3,370	1,839
Pennsylvania	2,242	2,184	1,259
Illinois	2,173	2,063	1,124
Arkansas	1,885	1,825	1,109

[1] Rankings are based on marketings for January-July 1986, which may exclude peak marketing periods for some states and some commodities. As data for August-December become available, 1986 rankings may shift to more closely match full-year rankings for 1984 and 1985.

Data were provided by economist Bob Williams of the Farm Income Estimating Section, Economic Research Service.

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